KLIMIN, I. K.

Fertilizers and Manures

Sowing onion seeds mixed with granulated superphosphate. Sad i og. No. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, June 1952, Uncl.

KLIMIN, L., inzhener-pilot

Foresight requires knowledge. Grazhd.av. 18 no.2:7-8 F '60.
(MIRA 14:3)
(Airplanes--Piloting)

KLIMIN, L. A.

Subject : USSR/Engineering AID P - 521

Card 1/1 Pub. 93 - 8/12

Authors : Kozenkov, N. S., Engineer, Klimin, L. A.

Title : Rod-shaped yokes for suspension of wooden beams and joints

Periodical : Sbor. mat. o nov. tekh. v stroi., 6, 22-23, 1954

Abstract : Rod-shaped yokes made from round steel bars for suspension of wooden beams and joints are suggested for ceiling construction. Diagram.

Institution : None

Submitted : No date

KLIMIN, L.A.; GORIN, A.P.

Automatic fuel-consumption meter. Avt.prom. 29 no.1:29-30 Ja '63. (MIRA 16:1)

1. Ul'yanovskiy avtozavod.
(Automobiles--Fuel consumption--Measurement)

MILOV, O. (Leningrad); KLIMIN, Ye. (Leningrad)

Ways to increase production. Prom.koop. 12 no.12:10 D '58.
(MIRA 12:2)

1. Predsedatel' pravleniya arteli "Kul'tigrushka" (for Milov).
2. Sekretar' partiynoy organizatsii arteli "Kul'tigrushka" (for Klimin).

(Leningrad--Toy industry)

GESHELE, Eduard Eduardovich, prof.; KLIMINA, P.F., red.; KHOLODUL'KIN, A.A., tekhn.red.

[Sketches of the development of Siberian agriculture] Ocherki razvitiia sibirskogo zemledeliia. Omsk, Omskoe obl.knizhnoe izd-vo, 1957. 105 p. (MIRA 13:5)

1. Deystvitel'nyy chlen Omskogo otdela Vsesoyuznogo geograficheskogo obshchestva pri Akademii nauk SSSR (for Geshele).
(Siberia--Agriculture)

KHOMENKO, Vyacheslav Andreyevich; KLIMINA, P.F., red.; KHOLODUL'KIN, A.A., tekhn.red.

[Continuous-operation methods and automatization constitute the means with which to increase labor productivity] Potochnye metody i avtomatizatsiia - reservy povysheniia proizvoditel'-nosti truda. Omskoe obl.knizhnoe izd-vo, 1958. 70 p. (MIRA 12:6)
(Omsk--Labor productivity)

GRIGOR'YEV, Daniil Petrovich; KLIMINA, P.F., red.; MEL'NIKOV, V.I., tekhn.red.

[Chemical industry in the Omsk Economic Region] Khimicheskaia promyshlennost' v Omskom ekonomicheskom raione. Omsk, Omskoe knizhnoe izd-vo, 1959. 27 p. (MIRA 13:6)
(Omsk Province--Chemical industries)

KUDRYAVTSEV, M.N., kand. tekhn.nauk; KLIMINA, P.F., red.

[Designing automobile roads for various natural conditions] Proektirovanie avtomobil'nykh dorog v raznykh prirodnykh usloviiakh; uchebnoe posobie. Omsk, Omskoe knizhnoe izd-vo, 1962. 67 p. (MIRA 17:5)

KAGANOVICH, Vladimir Yefremovich, kand. tekhn. nauk; KUDRYAVTSEV, M.N., prof., otv. red.; KLIMINA, P.F., red.

[Technical and economic substantiation of the variants of highway location; a manual] Tekhniko-ekonomicheskoe obosnovanie variantov trassy avtomobil'nykh dorog; uchebnoe posobie. Omsk, Zapadno-Sibirskoe knizhnoe izd-vo. Omskoe otd-nie, 1964. 56 p. (Biblioteka studenta, no.5)

(MIRA 18:6)

1. Zaveduyushchiy kafedroy proyektirovaniya avtomobil'nykh dorog Sibirskogo avtomobil'no-dorozhnogo instituta (for Kudryavtsev).

IZRAYLEVICH, L.A., red.; MIKSHTA, V.I., red.; SEVAST'YANOV, N.S., red.; KLIMINA, P.F., red.

[Foundry practice and heat treatment] Liteinoe proizvodstvo i termicheskaia obrabotka. Omsk, Zapadno-Sibirskoe knizhnoe izd-vo. Omskoe otd-nie, 1964. 198 p. (MIRA 18:6)

1. Omsk. Politekhnicheskiy institut. Kafedra "Mashiny i tekhnologiya liteynogo proizvodstva."

KAGANOVICH, Vladimir Yefimovich, kand. tekhn. nauk, dots.; KUPIN, Pavel Prokhorovich, inzh.; KLIMINA, P.F., red.

[Calculation and construction of flexible pavements; systematic manual] Raschet i konstruirovanie nezhestkikh dorozhnykh odezhd; metodicheskoe posobie. Omsk, Zapadno-Sibirskoe knizhnoe izd-vo, 1964, 85 p. (Biblioteka studenta, no.6) (MIRA 18:9)

KLIMINA, YE. V.

LAZAREV, N.V., zasl. deyatel' nauki, professor, redaktor; MUSAKIN, A.P., redaktor; KHAVIN, Z.Ya., redaktor; KLIMINA, Ye.V., tekhnicheskiy redaktor; ERLIKH, Ye.Ya., tekhnicheskiy redaktor; LEVIN, Sh.S., tekhnicheskiy redaktor.

[Industrial toxicology] Vrednye veshchestva v promyshlennosti. Part 1. [Organic substances] Organicheskie veshchestva. 1954. 810 p. Part 2. [Inorganic and simple organic compounds] Neorganicheskie i elementorganicheskie soedineniia. 1954. 582 p. Izd. 3-e, perer. i dop. Leningrad, Gos. nauchno-tekhn. izd-vo khim. lit-ry. [Microfilm]
(Industrial toxicology) (MLRA 7:11)

KLIMINA, Ye. V.

BOGDANOV, M.I.; KOLOBIKHIN, V.A.; ISAKOVA, N.A.; GARMONOV, I.V., red.; ZONIS, S.A., red.; KLIMINA, Ye.V., red.; ERLIKH, Ye.Ye., tekhn.red.

[Analysis of the products obtained in the industrial preparation of bivinyl from butane] Analis produktov proizvodstva divinila iz butana. Pod red. I.V.Garmonova. Leningrad, Gos.nauchno-tekhn.izd-vo khim.lit-ry, 1959. 115 p. (MIRA 13:2)
(Butadiene) (Butane)

VASIL'YEV, D.V.; MIKHAYLOV, V.A.; NORNEVSKIY, B.I.; DEMCHENKO, O.P., starshiy nauchnyy sotr., kand. tekhn. nauk, retsenzent; MURATOV, I.I., dots., kand. tekhn. nauk, retsenzent; REYNGOL'D, Yu.A., kand. tekhn. nauk, dots., retsenzent; BAYKO, V.F., kand. tekhn.nauk, dots., nauchnyy red.; KLIMINA, Ye.V., red.; KRYAKOVA, D.M., tekhn. red.

[Automatic control systems for ships] Sudovye avtomatizirovannye ustanovki. Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl., 1961. 595 p. (MIRA 15:2)
(Marine engineering) (Automatic control)

RIVKIN, Samuil Simonovich; OSTROMUKHOV, Ya.G., inzh., retsenzent; SLIV, E.I., doktor tekhn. nauk, retsenzent; CHERTKOV, R.I., doktor fiz-mat. nauk, nauchn. red.; KLIMINA, Ye.V., red.

[Theory of gyroscopic devices] Teoriia giroskopicheskikh ustroistv. Leningrad, "Sudostroenie." Pt.2. 1964. 547 p. (MIRA 17:7)

OKUN', Yevsey L'vovich; KALANTAROV, M.N., retsenzent; STREL'NIKOV, M.T., retsenzent; SHAL'NIKOV, G.I., nauchn. red.; NIKITINA, M.I., red.; KLIMINA, Ye.V., red.; SACHUK, N.A., red.; KVOCHKINA, G.P., red.

[Radio transmitting devices] Radioperedaiushchie ustroistva. Izd.2., perer. i dop. Leningrad, Sudostroenie, 1964. 539 p. (MIRA 17:5)

KLIMINSKAYA, L.M.

USSR/Pharmacology and Toxicology - Chemotherapeutic Preparations. Antituberculotic Drugs. V-8

Abs Jour : Ref Zhur - Biol., No 21, 1958, 98592

Author : Kliminskaya, L.M.

Inst : -

Title : Dynamics of Liquor in Children Ill with Tuberculous Meningitis Treated with Streptomycin.

Orig Pub : Zdravookhr. Kazakhstana, 1958, No 1, 50-53

Abstract : On the basis of a study of 120 case histories of children who suffered from tuberculous meningitis (TM), it is shown that, in a meningeal form of TM, during the first 1½-2 months a certain increase of cytosis and protein, and later a gradual decrease to normal, is observed. Assanation of liquor begins on the 5th month of treatment. In meningo-encephalytic and hydrocephalic forms of TM, cytosis and proteins lower gradually. Assanation in unfavorable course of the process occurs on the 6th month, by prolonged

Card 1/2

KLIMINSKAYA, L.M

KLIMINSKAYA, L.M.

Case of combined tuberculous meningitis with meningitides of different etiology in children [with summary in French]. Probl.tub. 34 no.5: 52-54 S-O '56. (MIRA 10:11)

1. Iz detskogo otdeleniya (konsul'tant - kandidat meditsinskikh nauk Ye.A. Treilikh) Kazakhskogo nauchno-issledovatel'skogo tuberkuleznogo instituta (dir. - kandidat meditsinskikh nauk A.M.Zadvornykh, zam. direktora po nauchnoy chasti-- kandidat meditsinskikh nauk V.D.Grund)
(TUBERCULOSIS, MENINGEAL, in inf. and child
with meningitis of non-tuberc. etiol.)
(MENINGITIS, in inf. and child
with tuberc. meningitis)

KLIMINSKAYA, L.M.

Dynamics of the cerebrospinal fluid in children with tuberculous meningitis treated with streptomycin. Zdrav. Kazakh. 18 no.1:50-53 '58. (MIRA 13:7)

1. Iz detskogo otdeleniya Nauchno-issledovatel'skogo instituta tuberkuleza Minzdrava KazSSR (nauchnyy rukovoditel' - kandidat meditsinskikh nauk Ye.A. Ginzburg).
(MENINGES--TUBERCULOSIS) (CEREBROSPINAL FLUID)
(STREPTOMYCIN)

KHRAPOV, A.Ya.; BEDAREV, V.I.; Prinimal uchastiye KLIMINSKIY, Ye.V.

Effect of ferrosilicon additions on the crystallization of magnesium cast iron. Izv. vys. ucheb. zav.; chern. met. 6 no.10:134-138 '63. (MIRA 16:12)

1. Sibirskiy metallurgicheskiy institut.

SHVAYKA, O.P.; KLIMISHA, G.P. [Klymysha, H.P.]

Behavior of oxazoles in some electrophilic substitution reactions. Dop. AN URSR no.11:1479-1482 '65. (MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov i osobo chistykh khimicheskikh veshchestv.

KAPLAN, S.A.; KLIMISHIN, I.A.

Dissipation of light in spherical nebulae. TSir.Astron.obser. L'viv.un. no.27:11-16 '53 (MIRA 13:10)

(Nebulae) (Astrophysics)

KAPLAN, S. A., and KLIMISHIN, I. A.

Scattering of Light in Spherical Nebulas

A model of a sperical nebula is designed, its optical radius exceeding the geometrical one, and receiving on its internal boundary the luminous flow of the central star. Assuming the spherical scattering index to be known, the luminous intensity on the boundary is computed. The abstractor, I. N. Minin, found some errors in the computation. (RZhAstr, No. 9, 1955) Tsirkular Astronom. Observ. Lvovsk. unta, No. 27, 1953, 11-16

SO: Sum. No. 744, 8 Dec 55 - Supplementary Survey of Soviet Scientific Abstracts (17)

KAPLAN, S.A.; KLIMISHIN, I.A.

Density limits for white dwarfs. TSir.Astron.obser.L'viv.un. no. 27:17-22 '53 (MIRA 13:10)

(Astrophysics)

KLIMISHIN, I.A.; KOPYSTYANSKIY, A.A.

Some remarks on the processing of visual and photographic observations of artificial earth satellites. Biul.sta.opt.nabl.isk. sput.Zem. no.3:15-16 '58. (MIRA 13:6)

1. L'vovskaya astronomicheskaya observatoriya, stantsiya nablyudeniy iskusstvennykh sputnikov Zemli.
(Artificial satellites--Tracking)

URASIN, L.A.; KALIKHEVICH, F.F.; IVAKINA, T.Ya.; KLIMISHIN, I.A.; BRATIYCHUK, M.V.; RUSSO, Yu.D.; CHUPRINA, R.I., nauchnyy sotrudnik

Results of photographic observations of artificial earth satellites. Biul.sta.opt.nabl.isk.sput.Zem. no.6:18-23 '59. (MIRA 13:6)

1. Sotrudnik Astronomicheskoy observatorii im. Engel'gardta, Kazan' (for Urasin). 2. Sotrudniki stantsii fotonablyudeniya iskusstvenykh sputnikov Zemli v Nikolayevskom otdelenii Glavnoy astronomicheskoy observatorii AN SSSR (for Kalikhevich, Ivakina). 3. Nachal'nik nablyudatel'noy stantsii Astronomicheskoy observatorii L'vovskogo gosuniversiteta im.Iv.Franko (for Klimishin). 4. Nachal'nik fotograficheskoy stantsii 073 Odesskoy astronomicheskoy observatorii (for Russo). 5. Astronomicheskiy Sovet AN SSSR (for Chuprina.

(Artificial satellites--Tracking)

KLIMISHIN, I.A.

Graphic method for calculating the visibility of artificial earth satellites. Biul.sta.opt.nabl.isk.sput.Zem. no.8: 3-6 '59. (MIRA 13:6)

1. L'vovskaya astronomicheskaya observatoriya, stantsiya nablyudeniy iskusstvennogo sputnika Zemli.
(Artificial satellites--Tracking)

3(1)

AUTHORS: Kaplan, S.A., Klimishin, I.A. SOV/33-36-2-21/27

TITLE: On the Correlation Between the Observed Differences of the Degree of Interstellar Polarization and the Angular Distance of the Corresponding Points on the Celestial Sphere

PERIODICAL: Astronomicheskiy zhurnal, 1959, Vol 36, Nr 2, pp 370-371 (USSR)

ABSTRACT: By evaluating the data of Hiltner [Ref 2] the authors obtain approximatively the relation

$$\overline{(p_1 - p_2)^2} \approx 5{,}2\,\alpha^{0{,}24} ,$$

where $\overline{(p_1 - p_2)^2}$ is the mean quadratic difference of the degrees of interstellar polarization (in per cents) in two points of the firmament, and α the angular distance of these points from each other. It is reservedly conjectured that this correlation can be explained by the turbulent character of the interstellar magnetic fields.

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SOV/33-36-2-21/27

On the Correlation Between the Observed Differences of the Degree of Interstellar Polarization and the Angular Distance of the Corresponding Points on the Celestial Sphere

There are 2 references, 1 of which is Soviet, and 1 American.

ASSOCIATION: L'vovskaya astronomicheskaya observatoriya (L'vov Astronomical Observatory)

SUBMITTED: June 2, 1958

Card 2/2

3(1),10(1)

AUTHORS: Kaplan, S.A., and Klimishin, I.A. SOV/33-36-3-3/29

TITLE: Shock Waves in Stellar Envelopes

PERIODICAL: Astronomicheskiy zhurnal, 1959, Vol 36, Nr 3, pp 410-421 (USSR)

ABSTRACT: The authors consider physical properties of stellar shock waves, the possibility of separation of the envelopes etc. The shock waves are assumed to by stationary, at the other hand, the interaction with the radiation is considered. §1 contains the derivation of the formula for the Hugoniot-adiabatic curves and other general relations. Because of the complicatedness of the obtained system in the following paragraphs, the authors restrict themselves to especially interesting special cases. §2 is devoted to the so-called detonation-recombination shock waves in a gas-radiation-mixture (these waves move due to the energy liberated during the recombination of ions in the wave front). The waves are described by the equations

$$x^4(6\Gamma_2-3\Gamma_2\beta_2-1) - x^2\Big[3\Gamma_2^{\,2}(2-\beta_1) + 6\Gamma_2(\beta_2-\beta_1) + 8-3\beta_1 + \frac{2qq_1}{P_1}(\Gamma_2+1)^2\Big] + \Gamma_2(\Gamma_2+8-3\beta_2) = 0$$

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$$\frac{P_2}{P_1} = \frac{x^2+1}{\Gamma_2+1} ; \quad \frac{\rho_2}{\rho_1} = \frac{(\Gamma_2+1)x^2}{\Gamma_2(x^2+1)} , \quad x = \frac{v_1}{\sqrt{P_1/\rho_1}}$$

$$\Gamma = \beta + \frac{4(4-3\beta)^2}{3\beta+24(1-\beta)} ; \quad \delta = {}^5/_3 .$$

The indices 1 and 2 denote the values before and after the passage of the wave. $\beta = {}^{P}g/P$ is the ratio of the gas pressure to the full pressure; q is the set of nascent energy, v is the gas velocity with respect to the front of the wave, ρ is the density. The system is solved by successive approximation, where the fact, that the detonation-recombination waves are weak, facilitates the solution. In §3 the conditions are found under which a separation of the outer part of the envelope of a red giant taking place with a small velocity is possible. An undisturbed separation of an envelope mass amounting ca. $10^{-3} \div 10^{-5}$ solar masses is possible e.g. if the radius of the giant is 80 - 100 times greater than the solar radius, the mass of the giant nearly equals the solar mass and its absolute magnitude is $-4^m.5$ or $-5^m.8$. The velocity of the separating part is 50 km/sec, the

Shock Waves in Stellar Envelopes SOV/33-36-3-3/29

velocity of the shock wave 110 km/sec. The place of the separation lies nearly in the center of the radius. §4 treats the influence of radiative cooling on the parameters of a shock wave. It is stated that this influence is essential even at optical depths of ~ 30 and that it leads to a 10 - 100-fold diminution of 'he temperature behind the wave. §5 is devoted to the properties of shock waves in a degenerated gas.
There are 15 references, 12 of which are Soviet, 1 American, 1 English, and 1 German.

ASSOCIATION: L'vovskaya astronomicheskaya observatoriya (L'vov Astronomical Observatory)

SUBMITTED: June 2, 1958

Card 3/3

KLIMISHIN, I. A., Cand Phys-Math Sci, "Shock waves and ultrasonic currents in envelopes of stars." Kiev, 1960. (Min of Higher and Sec Spec Ed UkSSR, Kiev Order of Lenin State Univ im T. G. Shevchenko). (KL, 3-61, 204).

S/124/62/000/006/009/023
D234/D308

3,1560

AUTHOR: Klimishin, I. A.

TITLE: Theory of shock waves in stars

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 6, 1962, 13, abstract 6B66 (Tsirkulyar. Astron. observ. L'vovsk. un-ta, 1960, no. 35-36, 31-42)

TEXT: The author considers the propagation of a shock wave in the atmosphere of a cold star and the possibility of the shock wave tearing off the envelope of the star. The possibility of the formation of a planetary nebula as a result of such tearing off is viewed. A preliminary review is made of papers devoted to the problems of propagation of shock waves in stars, flares of new stars, gas dynamic solutions concerning the motion of a shock wave in a gas with density decreasing with the radius according to a power law. The problem is studied with several simplifying assumptions. In the equations of hydrostatic and radiation equilibrium for the envelope the mass and the luminosity of a sphere with ra-

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38474

S/124/62/000/006/007/023
D234/D308

3,1560

AUTHOR: Klimishin, I. A.

TITLE: Supersonic flows in transparent envelopes of stars

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 6, 1962, 12, abstract 6B63 (Tsirkulyar. Astron. observ. L'vovsk. un-ta, 1960, no. 35-36, 43-47)

TEXT: The problem of stationary flow of gas from the star is considered. It is assumed that the energy radiated during the motion is not absorbed by the envelope but escapes unhindered into space. An estimation of the absorption according to Kramers' formula shows that the envelope is actually transparent. An equation is formulated which determines the variation of the velocity of a stationary stream with distance. In order to assign the velocity of energy loss, the hypothesis of local thermodynamical equilibrium of the gas with the radiation is used in the first approximation. It is assumed that the temperature decreases with the radius, ac-

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cording to the law $T = T_0 \eta^{-\alpha}$ where T - temperature at the radius r_0, $\eta = r/r_0$. Solutions are obtained for the velocity $v(\eta)$ for various values of α. For $\alpha = 2$ and 3 the equations are solved numerically. It follows from the calculations that during the motion of a gas jet in the transparent envelope of the star the jet is accelerated. The acceleration can lead to an increase in velocity to 10 - 25 times the velocity of sound c_0 at the point r_0 where the acceleration begins. If $c_0 = 37$ km/sec, and $\alpha = 2$, the velocity of gas at a distance $2.5r_0$ from the center is equal to approximately 450 km/sec. /Abstracter's note: Complete translation./

Card 2/2

3.1530

78002
SOV/33-37-1-2/31

AUTHORS: Kaplan, S. A., Klimishin, I. A., Sivers, V. N.

TITLE: A Theory of Light Scattering in a Medium With a Moving Boundary

PERIODICAL: Astronomicheskiy zhurnal, 1960, Vol 37, Nr 1, pp 9-15 (USSR)

ABSTRACT: When the motion of a gas under cosmical conditions is considered, it is frequently necessary to take into account its interaction with radiation. Usually, the problem is studied by combining the equations of motion with the equations of radiative transfer; moreover, only the case of a steady boundary is considered, while actually the scattering occurs either before or after the light quantum passes through a moving boundary. Consequently, before any modern theory of light scattering is applied to hydrodynamic problems it is necessary to develop a theory of scattering in a medium with moving boundaries. This is the problem of the present authors. The following notations are used: k, the

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absorption coefficient per atom; n, the number of particles in a unit volume; x, a geometrical coordinate; τ = knx, the optical depth; t_1, the average time a quantum is in a state of absorption; t_2, the time spent by the quantum before two successive scatterings. Then τ may also be written as $\tau = x/ct_2$ where c is the velocity of light. Two cases are considered: $t_1 \gg t_2$, and $t_2 \gg t_1$. In the first case, let $u = t/t_1$ be a dimensionless time, v, the velocity of the moving boundary, and $p(\tau, u)$, the probability that a quantum of light absorbed at the depth τ will leave the medium in time t. Then if $P(\tau)$ is the probability of a quantum leaving the medium at any time, we have:

$$P(\tau) = \int_0^\infty p(\tau, u)\,du; \quad Z(\tau) = \int_0^\infty p(\tau, u)\,u\,du; \quad D(\tau) = \int_0^\infty p(\tau, u)\,u^2 du. \quad (5)$$

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This integral equation is rewritten as:

$$P(\tau) = \frac{1}{2(1+v)} e^{-\tau} + \frac{\lambda}{2(1+v)} \int_0^{\tau} e^{-(\tau-\tau')} P(\tau')\,d\tau' +$$

$$+ \frac{\lambda}{2(1+v)} \int_{\tau}^{\infty} e^{-(\tau'-\tau)} P(\tau')\,d\tau' - \frac{\lambda v}{1-v^2} \int_{\tau}^{\infty} e^{-\frac{\tau'-\tau}{v}} P(\tau')\,d\tau'. \qquad (15)$$

or

$$P(\tau) = (1-k_s) e^{-k_s \tau}, \quad k_s = \frac{1-\lambda}{v}. \qquad (16)$$

Here λ is an arbitrary constant. In the second case we have:

$$P(\tau) = \frac{\lambda}{2} e^{-\frac{\tau}{1+v}} + \frac{\lambda}{2} \int_{\frac{\tau v}{v+1}}^{\infty} e^{-|\tau-\tau'|} p(\tau' - v|\tau-\tau'|)\,d\tau'. \qquad (18)$$

and

$$P(\tau) = [1 - k(1+v)] e^{-k\tau}, \quad k = \frac{\sqrt{4(1-\lambda)+\lambda^2 v^2} - (2-\lambda) v}{2(1-v^2)}. \qquad (20)$$

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Equations (16) and (20) give the solutions for the two cases. There are 5 Soviet references.

ASSOCIATION: Lvov Astronomical Observatory (L'vovskaya astronomicheskaya observatoriya)

SUBMITTED: July 1, 1959

Card 4/4

80829

S/033/60/037/02/006/013
E032/E914

3.1530

AUTHORS: Kaplan, S. A., Klimishin, I. A.

TITLE: Some Notes on the Emission of Light under Cosmic Conditions

PERIODICAL: Astronomicheskiy zhurnal, Vol 37, Nr 2, pp 281-283 (USSR) 1960.

ABSTRACT: The present authors have previously pointed out (Refs 1 and 2) that radiation, which is one of the basic properties of shock waves in cosmic conditions, has an important effect on the structure of a shock wave, its motion, and the possibility of its observation. The present paper reports two new results in the theory of interaction of shock waves with radiation under cosmic conditions. It is well-known that the gas behind the front of a shock wave is heated to a high temperature and this leads to a strong emission of radiation by the front itself. Part of this radiation is emitted in the direction of motion and penetrates into the undisturbed region of the gas, is absorbed, and heats the gas, before it is reached by the shock wave-front. The

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Some Notes on the Emission of Light under Cosmic Conditions

heating of the gas before the front of a shock wave can be calculated using the theory of light scattering in a medium with a moving boundary which was developed in Ref 5. In the one dimensional case, the intensity of radiation at an optical distance τ from the wave front is given by Eq (1), where $\tau = knx$, $v = Vknt_1$, k is the absorption coefficient per particle, n is the number of particles per cc, x is the distance from the wave front, V is the velocity of the wave front, λ is the ratio of the scattering coefficient to the total absorption coefficient (i.e. the sum of the true absorption and scattering coefficients) and t_1 is the mean lifetime of a quantum in the absorbed state. Eq (1) is subject to the conditions $|1 - \lambda| \ll 1, v \gg 1$ which correspond to strong shock waves under cosmic conditions. The amount of radiant energy absorbed per unit volume and transformed into thermal energy is given by Eq (2). As the volume element in the gas moves towards the shock wave-front, the energy

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Some Notes on the Emission of Light under Cosmic Conditions

accumulated in it is given by Eq (3), since $dt/dx = -1/V$. In a steady-state wave F, V and $1-\lambda$ remain unaltered. It then follows from Eq (3) that the energy E is given by Eq (4), where $t_2 = 1/knc$ and is the mean lifetime of a quantum between two scattering events. In the first approximation one may put $F = \sigma T_{sh}^4$ in accordance with the Stefan-Boltzmann law where T_{sh} is the temperature on the front of the shock wave and is given by

$$T_{sh} = \sqrt{3V^2/16R}$$

where R is the gas constant. For $1-\lambda$ the approximate relation is

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80829

S/033/60/037/02/006/013
E032/E914

Some Notes on the Emission of Light under Cosmic Conditions

$1-\lambda = \exp(-h\bar{\nu}/kT_{sh})$, where $\bar{\nu}$ is the mean frequency of scattered radiation. A solution of the energy, mass and momentum conservation equations, which are given by Eq (5) with E given by Eq (4), determines the detailed structure of the heated region. It is, however, at once clear that the width of the heated region is approximately given by Eq (6). In stellar atmospheres this quantity is small and is of the order of a few centimeters or meters. In the chromosphere, the corona, or the interstellar gas, the width of the heated region is considerably greater and may become observable. Owing to the scattering of light in the higher-lying layers the radiation of the shock wave will penetrate into the outer layers before the shock wave reaches the surface. As a result, the intensity of radiation at the point of exit of the wave will begin to increase before the wave actually reaches this point. It is shown

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S/033/60/037/02/006/013
E032/E914

Some Notes on the Emission of Light under Cosmic Conditions

that although in the stellar and solar atmospheres the time during which this increase in intensity due to the penetration effect takes place is relatively small (of the order of a few seconds), in chromospheric flares it is considerably greater and may be of the order of minutes or tens of minutes. There are 6 Soviet references.

ASSOCIATION: L'vovskiy gosudarstvennyy universitet (L'vov State University)

SUBMITTED: October 11, 1959.

Card 5/5

20898

S/034/60/000/208/003/004
E032/E314

3.1540 (1062,1128,1184)

AUTHOR: Klimishin, I.A.

TITLE: A Theoretical Formula for the Intensity of the Radiation Emitted by a Flare

PERIODICAL: Astronomicheskiy tsirkulyar, 1960, No. 208, p. 13

TEXT: Solar flares may be associated with the propagation of a shock or a sound wave originating in the deeper layers in the chromosphere. If that is the case, then the intensity of the radiation emitted by a flare should be a definite function of time, the velocity of the wave front, the density of matter, etc. The theory of non-stationary scattering of light as developed by V.V. Sobolev (Ref. 1) leads to the following expression for the above intensity

$$\ln \frac{I(t)}{F} \approx - 3.6 \cdot 10^{24} v^2 \rho^2 (t_o - t) \qquad (1)$$

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20898

S/034/60/000/208/003/004
E032/E314

A Theoretical Formula ....

where V is the velocity of the wave in km/sec,
ρ is the density,
t_o is the time at which the wave reaches the surface, and
F is the total energy flux emitted from the wave front.

In the derivation of this formula it is assumed that $V\rho$ and F remain constant during the motion of the wave in the outward direction. It is pointed out that it would be interesting to compare this formula with observations and this will be done in a future paper in the Astronomicheskiy zhurnal. S.A. Kaplan is thanked for consultations.

ASSOCIATION: L'vovskaya astronomicheskaya observatoriya (L'vov Astronomical Observatory)

SUBMITTED: October, 1959

Card 2/2

S/169/62/000/002/057/072
D228/D301

AUTHOR: Klimishin, I. A.

TITLE: Precalculation of a sub-satellite point on the observer's parallel

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1962, 15, abstract 2G89 (Mezhdunar. geofiz. god. Inform. byul., no. 3, 1961, 79-81)

TEXT: The author gives an account of a simple graphical method, which allows the moments and place of passage of artificial earth satellites to be calculated with sufficient accuracy several days in advance. /Abstracter's note: Complete translation./

Card 1/1

S/269/63/000/002/015/037
A001/A101

AUTHOR: Klimishin, I. A.

TITLE: On a possible cause of the growth of chromospheric flare brightness

PERIODICAL: Referativnyy zhurnal, Astronomiya, no. 2, 1963, 54, abstract 2.51.431 ("Tsirkulyar Astron. observ. L'vovsk. un-ta", 1962, no. 37 - 38, 13 - 16)

TEXT: The author supposes that a flare is related to a shock or a sonic wave penetrating into the chromosphere from deeper layers. In this case, the growth of the flare brightness can be explained by an increase of emission escaping outwards with the motion of the emitting surface front from the depth to the higher layers of the solar atmosphere. Applying some conclusions from the theory of non-stationary light scattering, the author derives an approximate expression for the amount of emission j escaped outwards by the given time instant u_0, and during the entire time of the wave motion from infinity to the optical depth $\tau = v(u_0-u)$, where $u = t/t_1$ (t_1 is atom lifetime in an excited state), $v = d\tau/du = knt_1V$ (k is absorption coefficient per 1 atom, n is density of atoms,

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S/269/63/000/002/015/037
A001/A101

On a possible cause of the...

V = dx/dt is linear velocity of wave motion), F is the flux of emitted energy from the unit surface of the wave front. Using the derived expression the author obtains, for V = 100 km/sec and n = 10^8 (upper chromosphere) for the time of linear emission growth, which in maximum exceeds 3 times the background brightness the value equal to ~10 sec. The time of brightness growth in continuous spectrum is longer, by several orders of magnitude, than in lines. Thus the mechanism considered yields solutions which do not contradict observational data. The calculations can be applied to explanation of the effect of brightness increase preceding the appearance of any luminous front on the surface of a star.

E. Gurtovenko

[Abstracter's note: Complete translation]

Card 2/2

KLIMISHIN, I.A. [Klymyshyn, I.A.]; KRAVCHUK, A.L.

Increase in radiation intensity before the emergence of a shock wave to the surface of a homogeneous medium. Ukr. fiz. zhur. 7 no.10:1083-1089 O '62. (MIRA 16:1)

1. L'vovskiy gosudarstvennyy universitet im. Iv.Franko.
(Shock waves) (Radiation)

41493
S/033/62/039/005/006/011
E032/E514

24.2120
3.1560

AUTHOR: Klimishin, I.A.

TITLE: On the theory of stellar shockwaves

PERIODICAL: Astronomicheskiy zhurnal, v.39, no.5, 1962, 887-893

TEXT: Stellar shockwaves are usually investigated using the "classical" theory of shockwaves in a moving gas (L.D.Landau and Ye.M.Lifshits, Mekhanika sploshnykh sred (Mechanics of Continuous Media), GITTL, Moscow, 1953). This theory predicts that the temperature behind a shockwave moving with a velocity of the order of 1000 km/sec in a stellar envelope should be of the order of 2×10^7 deg, whereas observations indicate that the maximum temperature on the surface of a new star immediately after the explosion is of the order of $10^4 - 10^5$ deg. One suggestion to obviate this difficulty has been that the temperature is reduced as a result of the emission of radiation into the surrounding space. The present paper is concerned with another mechanism responsible for the reduction in the temperature. Thus, a stellar envelope consists of a gas-radiation mixture and the latter may often play an appreciable role. When a shockwave

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passes through such a medium a part of the wave energy may be spent not only in increasing the internal energy of the gas but also in increasing the radiation density. Hence, for given shock-wave velocity, the temperature behind the wave front may be less than the temperature given by the "classical" theory. The present paper is concerned with the generalization of the "classical" theory and considers the thermodynamic equilibrium of a gas-radiation mixture. It is shown that the equation for the adiabatic curve for such a system is

$$\frac{7(\gamma_2 - 1) + \beta_2(8 - 6\gamma_2)}{\gamma_2 - 1} \cdot \frac{\beta_1}{\beta_2} \cdot \frac{T_2}{T_1} - \frac{7(\gamma_1 - 1) + \beta_1(8 - 6\gamma_1)}{\gamma_1 - 1} -$$

$$- \frac{1 - \beta_1}{1 - \beta_2}\left(\frac{T_2}{T_1}\right)^4 + \frac{\beta_1}{\beta_2}\,\frac{1 - \beta_2}{1 - \beta_1}\left(\frac{T_1}{T_2}\right)^3 = \frac{2q\beta_1}{RT_1} - \frac{2F\beta_1}{R_1 T_1 \rho_1 u_1} \qquad (9)$$

where subscripts 1 and 2 represent the state of the gas before

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On the theory of stellar shockwaves S/033/62/039/005/006/011
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and after the passage of the shockwave, γ is the adiabatic exponent for the gas, β is the ratio of the gas pressure to the total pressure, T is the temperature of the mixture, q is the amount of bound energy liberated in the wave front, F is the flux of radiation from the surface of the shockwave front and u is the velocity of the gas relative to the wave front. This result is then used to find the discontinuities in physical parameters across the shockwave front. The results obtained are very similar to those considered by K. P. Stanyukovich (Neustanovivshiyesya dvizheniya sploshnoy sredy ["Non-steady Motion of a Continuous Medium"], Gostekhizdat, 1955). It is shown that the ratio of the gas to total pressure behind the shock front decreases sharply with increasing temperature discontinuity at the wave front. When the amount of wave energy spent in increasing the radiation density is taken into account, it is found that the density discontinuity is increased and the temperature discontinuity is appreciably reduced. In particular, for a shockwave moving with a velocity of the order of 1000 km/sec in a solar-type stellar envelope, the temperature behind the

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wave front is lower by a factor of 18.5 as compared to the temperature calculated from the "classical" shockwave theory. The general conclusion is that effects associated with the increase in the radiation density must not in general be ignored. There are 1 figure and 1 table.

ASSOCIATION: L'vovskaya astronomicheskaya observatoriya (L'vov Astronomical Observatory)

SUBMITTED: June 27, 1961

4

KLIMISHIN, I.A.

Determining the increase in radiation intensity before the exit of a shock wave to the surface of a star. Astron.zhur. 39 no.6:1006-1008 N-D '62. (MIRA 15:11)

1. L'vovskaya astronomicheskaya observatoriya.
(Stars—Radiation—Measurement)
(Shock waves)

KLIMISHIN, I.A.; BAZILEVICH, V.M.

Some results of statistic processing of the catalog of the interstellar polarization of star light. TSir. Astron. obser. L'viv. un. no.39/40:3-10 '63. (MIRA 16:11)

KLIMISHIN, I.A.

Calculating discontinuities of gas parameters at the front of a stellar shock wave. TSir. Astron. obser. L'viv. un. no.39/40:11-17 '63.

Probability of a quantum escape from a medium with a moving boundary. 18-21 (MIRA 16:11)

ACCESSION NR: AT4019693 S/2555/63/009/000/0200/0202

AUTHOR: Klimishin, I. A.

TITLE: Certain remarks on the role of radiation effects in the theory of stellar shock waves

SOURCE: AN SSSR. Astronomicheskiy sovet. Voprosy* kosmogonii (Problems of cosmogony), v. 9, 1963, 200-202

TOPIC TAGS: astronomy, stellar astronomy, star, shock wave, stellar atmosphere, star envelope

ABSTRACT: Certain results of a study of radiation effects in the theory of stellar shock waves are presented. If a shock wave moves in a star envelope with a velocity of about 1,000 km/sec, the temperature behind the wave front, determined for strong shock waves by the expression $T_2 = \frac{3V^2}{16R}$, where R is the gas constant, attains 20 million degrees. At such a temperature the radiation pressure $p_r = 1/3aT^4$ is of the same order or even greater than the gas pressure $p_g = \rho RT$, where ρ is the density of the medium and a is the Stefan-Boltzmann constant. In computing the parameters at the front of such a wave it is necessary to determine what part of the energy of motion of the shock wave in the long run will be transferred to an

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ACCESSION NR: AT4019693

increase in radiation density behind the wave front. As a result, for one and the same wave velocity the temperature behind the front of a wave moving in a gas-radiation mixture will be less than indicated by the formula for ordinary shock waves moving in gas. Behind the front of a strong shock wave the temperature is determined using the formula

$$T_2 \approx \frac{6\beta_2 V^2}{49R}, \qquad (1)$$

where β_2 is the ratio of the gas pressure to the total pressure behind the wave front. The temperature behind the front of a wave moving at 1000 km/sec in an envelope such as the sun's will be of the order of 700,000°, approximately 30 times less than the value obtained using the usually accepted formula. Certain authors contend that due to the decreasing density of the medium the velocity of a shock wave approaching the surface, and also the temperature behind the front, will increase sharply. However, this is true only as long as the optical depth of the wave front is considerably greater than unity. If part of the shock wave energy is radiated by the wave front and escapes into interplanetary space, the temperature behind the front of a strong shock wave is determined by the expression

$$T_2 = \frac{3V^2}{32R}\left[1+\sqrt{1+\frac{32F}{5\rho_1 V^3}-\frac{16F}{3\rho_1 V^3}}\right] \qquad (2)$$

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ACCESSION NR: AT4019693

or in the case of a gas-radiation mixture

$$T_2 \approx \frac{3V^2}{49R} \cdot \frac{\rho_2}{\rho_1}\left[1+\sqrt{1+\frac{28F}{9\rho_1 V^3}}-\frac{14F}{3\rho_1 V^3}\right], \quad (3)$$

where F is the energy flux from the wave front, which in the first approximation can be assumed to equal $F \simeq e^{-\tau}\sigma T_2^4$; τ is the optical depth of the wave front; is the Stefan-Boltzmann constant; ρ_1 is the density of an undisturbed medium. At optical depths of $\tau \approx 30$ shock wave luminescence will begin, and as a result the temperature behind the shock wave front decreases sharply and the shock wave itself is slowed down. If the dimensionless velocity of movement of the wave is $Vknt_1 \ll 1$, where k is the absorption coefficient for a single particle, n is the quantity of particles in a unit volume, t_1 is the mean time of presence of a quantum in the absorbed state ($t_1 \approx 10^{-8}$ sec for a resonance spectral line and $t_1 \simeq \frac{1}{nC}$, where C is the recombination coefficient associated with continuous spectrum emission), the intensity of the emerging radiation I(t) has an exponential dependence on time

$$I(t) \approx 2F_0 e^{-\frac{\dots}{t_1}(t-t_0)} \quad (4)$$

where t_0 is the time of emergence of the shock wave at the surface. It follows that in the atmospheres of stars and the sun the time involved in a brightness

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ACCESSION NR: AT4019693

increase is relatively short — several seconds. Orig. art. has: 4 formulas.

ASSOCIATION: Astronomicheskiy sovet AN SSSR (Astronomical Council)

SUBMITTED: 00Sep62 DATE ACQ: 12Mar64 ENCL: 00

SUB CODE: AS NO REF SOV: 007 OTHER: 002

Card 4/4

KAPLAN, S.A.; KLIMISHIN, I.A.

Methods of analysis of interstellar turbulence. Astron.zhur. 41 no.2:274-281 Mr-Ap '64. (MIRA 17:4)

1. L'vovskaya astronomicheskaya observatoriya i Radiofizicheskiy institut Gor'kovskogo gosudarstvennogo universiteta.

L 504F-65 EWT(1)/EWG(v) Pe-5/Pae-2 ASD(p)-3/ASD(f)/AEDC(a) GW

ACCESSION NR: AP4043954 S/0033/64/041/004/0657/0661

AUTHOR: Kaplan, S. A.; Klimishin, I. A.

TITLE: On the structure of a shock wave with emission

B

SOURCE: Astronomicheskiy zhurnal, v. 41, no. 4, 1964, 657-661

TOPIC TAGS: shock wave structure, shock wave emission, nonstationary light scattering, light scattering theory, heated zone temperature

ABSTRACT: Calculation of the structure of a shock wave with emission (calculation of shock wave parameters) is considered with the use of the results of the theory of nonstationary light scattering in a medium with moving boundaries obtained earlier by the authors (Astronomicheskiy zhurnal, 37, 9, 1960; Ukrainskiy fizicheskiy zhurnal, V, 620, 1960). The stationary one-dimensional motion of an ideal gas, effected by the emission flow F is considered. From the conditions for conservation of mass, energy, and momentum, under the assumption that pressure and internal energy of the nondisturbed gas are negligible, expressions for the temperature T and the flow F at a given point are derived in terms of V_0, n, γ, R and μ, where V_0 is the in-

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L 7048-65

ACCESSION NR: AP4043954

itial velocity of the emission front, $n = \rho_0/\rho$, where ρ_0 is density of the flowing gas and ρ is the density of the nondisturbed gas, γ is the isentropic exponent, R is an ideal gas constant, and μ is the molecular weight. On the basis of light scattering theory, differential equations for the source function $B(\tau)$ are written and their solutions containing terms T_+ (temperature behind the shock wave front) and T_- (temperature ahead of the shock wave front) are derived. To determine the unknowns T_+ and T_-, expressions derived earlier for T and F for immediate values behind and ahead of the shock wave front are used. A system of four equations is derived from which T_+, T_-, n_+ and n_- as functions of V_0 and ρ_0 are calculated. From the calculated values of T_+ and T_-, temperature and pressure in the heated zone can be determined. It is established that the temperature in the heated zone varies with the distance from the shock wave front according to the exponential law. The results obtained are applied to the study of the propagation of shock waves in stellar envelopes. It is shown that temperatures in the heated zone immediately ahead of and behind the shock wave front are of the same order. Orig. art. has: 14 formulas.

Card 2/3

7048-65

ACCESSION NR: AP4043954

ASSOCIATION: L'vovskaya astronomicheskaya observatoriya (L'vov Astronomical Observatory)

SUBMITTED: 07Oct63 ATD PRESS: 3104 ENCL: 00

SUB CODE: ME NO REF SOV: 010 OTHER: 002

Card 3/3

L 20129-65 EWT(m)/EPR/EWG(v)/EPA(W)-2/EWT(1)/EEC(t)/T-2/EPA(sp)-2/EWA(m)-2/EWA(c)
Pz-6/Pe-4/Pab-10/Pae-2/ IJP(c)/AEDC(a)/SSD/ASD/SSD(c)/SSD(b)/AFWL/AED f)-3/
3/AFETR/RAEM(a)/ESD(gs)/ESD(t)/RAE(c) GW

ACCESSION NR. AT4049114 S/2555/64/010/000/0146/0153

AUTHOR: Klimishin, I. A.

TITLE: Some approximate solutions of gas dynamic equations

B+1

SOURCE: AN SSSR. Astronomicheskiy sovet. Voprosy* kosmogonii, v. 10, 1964. Problemy* magnitnoy gidrodinamiki i kosmicheskoy gazodinamiki (Problems in magnetic hydrodynamics and cosmic gas dynamics and cosmic gas dynamics), 146-153

TOPIC TAGS: stellar atmosphere, astrophysics, magnetohydrodynamics, cosmic gas dynamics, shock wave, shock wave dissipation

ABSTRACT: In recent years, a number of authors have developed approximate methods for the solution of the equations of gas dynamics in application to the study of individual specific astrophysical problems. A brief review of such studies has been presented by Ono, Sakashita and Ohyama (Progr. Phys. Suppl., 1951, 20) and Schatzman (Intern. Astron. Union. Symp. N 12, Bologna, 1961). Some of these methods have not yet been exploited fully and it is these methods which are discussed by the author. Part 1 is a discussion of methods for the study of the dissipation of a shock wave in a stellar atmosphere. Part 2 analyzes the possibility of the extended atmosphere of a star being maintained by periodic shock waves. Part 3 reviews studies of the structure of a shock wave accompanied by radiation.

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L 20129-65
ACCESSION NR: AT4049114

2

In this relatively brief paper the studies of 29 authors are cited to indicate that the possibilities of solving the three mentioned problems have by no means been exhausted. "In conclusion, the author wishes to thank S. A. Kaplan and V. G. Gorbatskiy for sustained interest in this paper and numerous discussions of the problems presented". Orig. art. has: 8 formulas.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: AA, ME

NO REF SOV: 016 OTHER: 015

Card 2/2

L 04307-67 EWT(1)/FCC GW/WS-2

ACC NR: AR6013394 SOURCE CODE: UR/0269/65/000/011/0042/0042

AUTHOR: Klimishin, I. A.

51 B

TITLE: Analysis of the structural functions of nonthermal cosmic radio emission

SOURCE: Ref. zh. Astronomiya, Abs. 11.51.384

REF SOURCE: Tsirkulyar Astron. observ. L'vovsk. un-ta, no. 41, 1964, 3-4

TOPIC TAGS: space magnetic field, radio emission, cosmic radiation, cosmic radio source

ABSTRACT: The results of a determination of the structural function of the interstellar magnetic field according to fluctuations of the luminance temperature of cosmic radio emission are presented in tabular and graphical form. [Translation of abstract]

SUB CODE: 03

1/1 gl UDC: 523.164:523.15

POLUSHINA, N.A.; KUSHNIRUK, V.A.; KLIMISHIN, V.S.

Wintering of Miniopterus schreibersii Kuhl (Mammalia, Chiroptera) in Transcarpathia. Zool. zhur. 43 no.5:782-783 '64 (MIRA 17:7)

1. Kafedra zoologii pozvonochnykh biologicheskogo fakul'teta L'vovskogo gosudarstvennogo universiteta.

CHLEBOWSKI, Jakub; KLIMIUK, Ludmila

Excretion of uropepsin and 17-ketosteroids in patients with respiratory insufficiency. Pol. arch. med. wewnet. 33 no.8: 863-868 '63.

1. Z II Kliniki Chorob Wewnetrznych AM w Bialymstoku Kierownik: prof. dr med. J. Chlebowski.
(RESPIRATORY INSUFFICIENCY)
(17-KETOSTEROIDS) (UROPEPSIN)
(URINE) (PULMONARY HEART DISEASE)

KLIMKA, A.

7707. Klimka, A. Vnutrikolkhoznaya demokratiya. Vil'nyus, Gospoitnavchizdat, 1954. 56s. 20sm. 5.000 ekz. 50K.--Na Litov. Yaz.--(55-3517) 338.1K

SO: Knizhmaya Letopis', Vol. 7, 1955

KLIMKAITE, I.

GEOGRAPHY & GEOLOGY

MOKSLINAI PRANESIMAI.

KLIMKAITE, I. Some data about the gas conditions of water of Lithuania lakes. p. 107.

Vol. 8, 1958.

Monthly List of East European Accession (EEAI) LC Vol. 8, No. 3
March 1959, Unclass.

L 28361-66 EPF(n)-2/EWT(1)/ETC(m)-6 IJP(c) WW

ACC NR: AT6012824 SOURCE CODE: UR/2910/65/005/001/0151/0154

67

B+1

AUTHOR: Kalvenas, S. (Kal'venas, S. P.); Klimka, L. (Klimka, L. A.)

ORG: Institute of Physics and Mathematics, Academy of Sciences Lithuanian SSR (Institut fiziki i matematiki Akademii nauk Litovskoy SSR)

TITLE: Generation of acoustic and electric ultrasound oscillations in semiconductors in strong electric fields

SOURCE: AN LitSSR. Litovskiy fizicheskiy sbornik, v. 5, no. 1, 1965, 151-154

TOPIC TAGS: ultrasonics, sound propagation, sound wave, germanium, acoustic effect, acoustic radiation, crystal lattice vibration

ABSTRACT: The authors report an investigation of the effect of generation of acoustic waves and modulation of a weak constant current flowing through a point contact
on germanium following the application of a pulsed current of high current density.
When only a pulsed current was applied, termination of the pulse was followed by a
train of acoustic oscillations. When weak direct current (of the order of several
milliamperes) was superimposed on the pulsed current, modulation of the direct current was observed. The experiment by which it is proved that the modulation is due
to acoustic waves in the germanium crystal is briefly described. A qualitative relation is established between the amplitude of the ac component of the modulation and
the amplitude of the acoustic oscillation. The larger the acoustic oscillation amplitude, the deeper the modulation of the direct current (0.15% modulation was at-

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L 28361-66

ACC NR: AT6012824

0

tained in the experiment). The results can be explained by assuming that the acoustic oscillations result from thermal dilatation of the germanium lattice near the point contact during the flow of the current pulses, while the modulation of the weak direct current is connected with the change of the semiconductor resistivity as a result of the piezoeffect. There are also grounds for assuming that the piezoeffect is stronger on the surface of the germanium than inside it. Orig. art. has: 5 figures. [02]

SUB CODE: 20/ SUBM DATE: 26May64/ OTH REF: 003/ ATD PRESS: 4262

Card 2/2

KLIMKEVICH, A.P.

Inhibiting effect of fat on secretion of the gastric glands. Vop. fiziol. no.5:80-87 '53. (MLRA 8:1)

1. Chernovitskiy meditsinskiy institut, kafedra normal'noy fiziologii.
(GASTRIC JUICE,
secretion, eff. of fat, inhib. action)
(FATS, effects,
on gastric secretion, inhib. action)

KLIMKEVICH, V.P.

Comparative analysis of the effectiveness of treating hypertension with reserpine and other routine methods. Sov. med. 24 no.6:76-81 Je '60. (MIRA 13:9)

1. Iz pervogo terapevticheskogo otdeleniya (zav. M.Ya. Rypskaya) Ob"yedinennoy polikliniki Ministerstva putey soobshcheniya (nachal'nik A.G. Sarkisov).

(RESERPINE) (HYPERTENSION)

KLIMKEVICH, V.P.; VOKHRATYAN, M.P. (Moskva)

Importance of the reserpine test in the reserpine treatment of hypertension in the polyclinic. Sov.med. no.3:92-95 '62.
(MIRA 15:5)

1. Is Ob"yedinennoy polikliniki Ministerstva putey soobshcheniya (nachal'nik A.G. Sarkisov, zaveduyushchaya 1-m terapevticheskim otdeleniyem M.Ya. Rynskaya).
(RESERPINE) (HYPERTENSION)

KLIMKEVICIUTE, O.

Development of Communism and control of public health by the Party. Sveik. apsaug. 9 no.2:40-45 F'64.

1. Vilniaus Valst.V.Kapsuko v. universiteto TSKP istorijos katedra. Mokslinis vadovas: doc.K.Navickas.

*

KLIMKIEWICZ, Halina; ROSE, Andrzej

Case of multiple infected pulmonal emboli in the course of streptococcal osteomyelitis. Pol. przegl. radiol. 29 no.4: 387-392 Jl-Ag '65.

1. Z Zakladu Radiologii Instytutu Gruzlicy (Kierownik: prof. dr. med. K. Ossowska) i z Oddzialu XI Instytutu Gruzlicy (Kierownik: doc. dr. med. B. Kampioni).

ZAJACZKOWSKA, Jadwiga; PIOTROWSKI, Marian; SZWARC, Maria;
KLIMKIEWICZ, Halina

A case of multiple papilloma of the trachea and main bronchus. Gruzlica 31 no.9:981-987 '63.

1. Z Oddzialu II Instytutu Gruzlicy Kierownik: prof. dr W. Jaroszewicz Z Zakladu Radiologii Instytutu Gruzlicy Kierownik: prof. dr K. Ossowska.

(BRONCHIAL NEOPLASMS) (TRACHEAL NEOPLASMS)
(PAPILLOMA) (THORACIC RADIOGRAPHY)
(BRONCHOSCOPY)

IZDEBSKA-MAKOSA, Zuzanna; KLOTT, Maria; ROWINSKA, Ewa; KLIMKIEWICZ, Halina; KOZIOROWSKI, Antoni

Diagnostic difficulties in the pulmonary fibrosis. Gruzlica 33 no.7:605-613 Jl '65.

1. Z Kliniki Chorob Pluc (Kierownik: doc. dr. P. Krakowka), z Zakladu Radiologii (Kierownik: prof. dr. K. Ossowska) i z Zakladu Fizjopatologii (Kierownik: dr. A. Koziorowski) Instytutu Gruzlicy.

CHODKOWSKA, Stefania, prof. dr. med.; KLIMKIEWICZ, Halina; PIOTROWSKI, Marian; ZAJACZKOWSKA, Jadwiga.

Primary amyloidosis of the lower respiratory tract. Gruzlica 33 no.3:241-246 Mr'65.

1. Z Oddzialu II (prof. dr. med. W. Jaroszewicz); z Zakladu Patologii (Kierownik: prof. dr. med. S. Chodkowska) i z Zakladu Radiologii (Kierownik: prof. dr. med. K. Ossowska) Instytutu Gruzlicy, Warszawa.

ZALESKI, Jerzy, dr; KLIMKIEWICZ, Marian, mgr; ZIELINSKI, Aleksander

Reviews of publications. Tech gosp morska 14 no. 7:210-211 Jl '64.

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KULAMOWICZ, Antoni; KLIMKIEWICZ, Witold

Phoxinus percnurus percnurus (Pall.) 1811 (Cyprinidae, Osteichthyes) on the territories of the mouth of the Vistula River. Nauki matem przyrod Lodz no.12:141-143 '62.

1. Katedra Zoologii Systematycznej, Uniwersytet, Lodz.

JONEK, Jan, doc. dr.; SKALBA, Henryk, doc. dr.; KLIMKIEWICZ, Zdzislaw; DZIECIUCHOWICZ, Lech.

Histochemical reactions of alkaline phosphatases and adenosinetriphosphatase in human placenta in relation to the period of pregnancy. Endokr. Pol. 16 no.3:301-312 My-Je '65.

1. Zaklad Histologii i Embriologii Slaskiej Akademii Medycznej w Zabrzu (Kierownik: doc. dr. J. Jonek); II Klinika Poloznictwa i Chorob Kobiecych Slaskiej Akademii Medycznej w Bytomiu (Kierownik: doc. dr. H. Skalba).

JONEK, Jan; SKALBA, Henryk; KLIMKIEWICZ, Zdzislaw; DZIECIUCHOWICZ, Lech

Study on the behavior of leucine aminopeptidase in cancer of the uterine cervix. Ginek. Pol. 36 no.9:985-991 S '65.

1. Z Zakladu Histologii i Embriologii Slaskiej AM w Zabrzu-Rokitnicy (Kierownik: doc. dr. med. J. Jonek) i z II Kliniki Poloznictwa i Chorob Kobiecych Slaskiej AM w Bytomiu (Kierownik: doc. dr. med. H. Skalba).

KLIMKIN, I., kapitan

First steps of the party committee of a military unit. Komm.Vooruzh.-Sil no.2:65-69 Ja '61. (MIRA 14:8)
(Russia--Army--Political activity)

L 33272-65 / EWT(d)/EWT(l)/EWG(v) Po-4/Pe-5/Pq-4/Pg-4/Pk-4/Pl-4 GW

ACCESSION NR: AP5008243

S/0286/65/000/005/0131/0131

AUTHORS: Lukavchenko, P. I.; Danilov, G. A.; Klimkin, I. S.

41

TITLE: Quartz astaticized gravimeter-altimeter. Class 42, No. 150240

B

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 5, 1965, 131

TOPIC TAGS: gravimeter, altimeter

ABSTRACT: This Author Certificate presents a quartz astaticized gravimeter-altimeter containing gravimeter and altimeter systems in the form of Golitsin pendulums. To increase the accuracy of measurements without forced electric thermo-static control and to decrease the weight of the device, the axes of rotation of the elastic quartz systems are placed in a horizontal plane parallel to each other. These elastic systems are made in the form of a common monolith and are provided with separate optical systems.

ASSOCIATION: none

SUBMITTED: 23Jun61 ENCL: 00 SUB CODE: AC, ES

NO REF SOV: 000 OTHER: 000

Card 1/1

LYZHIN, K.; KLIMKIN, M., red.; ASKINAS, L., tekhn. red

[Yenisey; handbook and guide from Minusinsk to Dudinka] Enisei; putevoditel'-spravochnik ot pristani Minusinsk do pristani Dudinka. Izd.2., perer. i dop. Krasnoiarsk, Krasnoiarskoe knizhnoe izd-vo, 1953. 208 p. (MIRA 15:12)

1. Yeniseyskoye rechnoye parokhodstvo.
(Yenisey Valley—Handbooks, manuals, etc.)

KLIMKINA, M.V., mladshiy nauchnyy sotrudnik

Materials on the comparative sanitary and hygienic description of individual harmful substances in the production of synthetic isoprene rubber (dimethyldioxane, dioxane alcohol and high-boiling fractions of vat residues). Gig. i san. 25 no. 6:85-87 Je '60. (MIRA 14:2)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta gigiyeny i sanitarii imeni F.F. Erismana Ministerstva zdravookhraneniya RSFSR.

(AIR—POLLUTION) (WATER—POLLUTION)
(RUBBER INDUSTRY—HYGIENIC ASPECTS)

KLIMKINA, N.V., mladshiy nauchnyy sotrudnik

Hygienic standards for reservoir water with regard to injurious substances from the production of synthetic isoprene rubber. Gig. i san. 24 no.6:8-16 Je '59. (MIRA 12:8)

1. Iz Moskovskogo nauchno-issledovatel'skogo instituta sanitarii i gigiyeny imeni F.F.Erismana Ministerstva zdravookhraneniya RSFSR.

(WATER POLLUTION
by inj. substances from prod. of synthetic isoprene rubber, hyg. standard. of substances (Rus))
(RUBBER
inj. substances from prod. of synthetic isoprene rubber in reservoir water, hyg. standard. (Rus))

KLIMKINA, N. V., Cand Med Sci -- (diss) "Hygienic standardization of reservoir water from harmful substances in the production of synthetic isopropene rubber (isoprene and dimethyldioxane)." Moscow, 1960. 11 pp; (First Moscow Order of Lenin Medical Inst im I. M. Sechenov); 200 copies; price not given; (KL, 17-60, 169)

KLIMKINA, N.V.

Experimental basis for the permissible concentration of dimethyldioxane in bodies of water. San.okhr.vod.ot zagr.prom. stoch.vod no.5:7-27 '62. (MIRA 17:6)

1. Moskovskiy nauchno-issledovatel'skiy institut sanitarii i gigiyeny imeni F.F.Erismana.

KLIMKINA, N.V.

Experimental basis for the permibbible concentration of isoprene in bodies of water. San.okhr.vod.ot zagr.prom.stoch.vod no.5: 28-43 '62. (MI A 17:6)

1. Moskovskiy nauchno-issledovatel'skiy institut sanitarii i gigiyeny imeni F.F.Erismana.

SAVELOVA, V.A.; BRUK, Ye.S.; KLIMKINA, N.V.; RUSSKIKH, V.V.

Experimental basis for the permissible concentration of cyclohexanol in bodies of water. San.okhr.vod.ot zagr.prom.stoch.vod no.5: 78-93 '62. (MIRA 17:6)

1. Moskovskiy nauchno-issledovatel'skiy institut sanitarii i gigiyeny imeni F.F.Erismana.

SAVELOVA, V.A.; KLIMKINA, N.V.

Experimental basis for the maximum permissible cyclohexane concentration in the water of reservoirs and rivers. San. okhr. vod. ot zagr. prom. stoch. vod. no.6:30-45 '64.

Experimental basis for the maximum permissible cyclohexanone oxime concentration in the water of reservoirs and rivers. Ibid.:64-75 (MIRA 18:3)

1. Moskovskiy nauchno-issledovatel'skiy institut gigiyeny imeni F.F.Erismana.

SAVELOVA, V.A.; BRUK, Ye.S.; KLIMKINA, N.V.

Experimental basis for the maximum permissible cyclohexene concentration in the w ter of reservoirs and rivers. San. okhr. vod. ot zagr. prom. stoch. vod. no.6:46-63 '64.

(MIRA 18:3)

1. Moskovskiy nauchno-issledovatel'skiy institut gigiyeny imeni F.F.Erismana.