30282

S/049/61/000/011/005/005
D239/D303

On a new mechanism for ...

Sciences USSR, Institute of Terrestial Magnetism, Ionosphere and Wave Propagation)

SUBMITTED: August 29, 1960

Card 6/6

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

28755
S/056/61/041/003/008/020
B125/B102

24.2120 (1049, 1141, 1160)

AUTHOR: Gintsburg, M. A.

TITLE: Anomalous Doppler effect in plasma

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 3(9), 1961, 752-755

TEXT: This article deals with the excitation of electromagnetic waves in plasma by an ion beam, account being taken of the motion of ions in the plasma. An ion having the mass M_1 is assumed to move in a plasma along the external magnetic field H at a velocity u. Since it is assumed to rotate around the lines of force, it may also be considered an oscillator with the sequence of eigenfrequencies $\omega_s = s\Omega_1$ ($s = 1, 2, \ldots$). Ω_1 denotes the ionic Larmor frequency. If $\omega < \omega_H < \omega_0$ and $\theta = 0$ (i.e., in the case of propagation along the field), the dimensionless frequency $\eta = \omega/\Omega$ is defined by the equation $u/v_A = (1 + Q/\eta)\sqrt{(1+\eta)(1-\alpha\eta)}$ (1), where m is the electron mass, M is the mass of the plasma ion, N is the ion

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S/056/61/041/003/008/020
B125/B102

Anomalous Doppler effect in plasma

concentration in the plasma, $v_A = \sqrt{4\pi NM}$ is the Alfvén velocity, and $\alpha = m/M$, $Q = M/M_1$. Eq. (1) has the approximate roots $\eta_1 = v_A/u$; $\eta_2 = (u/v_A)^2$, $\eta_3 = 1/\alpha - (u/v_A)^2$. A graphical analysis of (1) shows that: a) when $u > \frac{1}{2} v_A\sqrt{M/m}$, the ion excites the wave with the single frequency F_1; b) when $\frac{1}{2} v_A\sqrt{M/2} > u > 2.6\ v_A$, the ion excites waves in the three frequency ranges F_1, F_2, and F_3; c) when $u < 2.6\ v_A$, an ion moving faster than light excites a wave only in the range of gyromagnetic electron resonance ($\omega \sim \omega_H$). For $\omega \sim \omega_H$ it is necessary to take also account of resonance absorption without collisions. A new effect results from (1), i.e., the ionic excitation of electromagnetic waves with a frequency smaller than the Larmor frequency of the ion. This is similar to the excitation of magnetohydrodynamic waves. The ion also excites electromagnetic plasma oscillations in the F_3 range. For waves propagating at an angle θ relative to $\vec{H}$, the condition for excitation reads $\frac{u}{v_A} = \left(1 - \frac{Q}{\eta}\right) \frac{1}{n(\theta,\eta)\cos\theta} \frac{c}{v_A}$ (2). The dependence of the refractive index on θ and η is, however, more complex.

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B125/B102

Anomalous Doppler effect in plasma

There are three radiation cones corresponding to the three frequency ranges F_1, F_2, and F_3. For $Q = 0$, (2) is the condition for Cherenkov radiation. Low-frequency oscillations are also excited by relativistic particles, e.g., the relativistic protons of the internal radiation belt. A formula of V. D. Shafranov is mentioned. In the author's opinion, the short-time fluctuations of the geomagnetic field might be ascribed to the protons of solar corpuscular currents. The magnetohydrodynamic branch of radiation corresponds to oscillations with some tenth of cycles. According to V. Ya. Eydman (ZhETF, 36, 1335, 1959), the ion does not radiate along the field when $u < c/n$. The radiation of an infinite ion beam is discussed next. Assuming a displaced Maxwell distribution

$f(v) = \text{const} \cdot \exp\left\{-S^{-2}\left[v_x^2 + v_y^2 + (v_z - u)^2\right]\right\}$ and for $\Theta = 0$ one obtains the following expression for the refractive index.

$n^2 = 1 + \frac{i\sqrt{\pi}}{(\omega + i\gamma)^2 k} \sum_{l=1}^{4} \frac{\omega_{0l}^2}{S_l} (\omega + i\gamma - ku_l)\, W(p_l)$, where k is the wave number, and γ is the increment. $S = (2\kappa T)^{1/2} M^{-1/2}$ is the thermal velocity;

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S/056/6 /043/003/008/020
B[illegible]/B102

Anomalous Doppler effect in plasma

$p_1 = \frac{\omega \mp \omega_{H,1} + i\gamma - ku_1}{kS_1}$ and $W(p) = e^{-p^2}\left(1 + \frac{2i}{\sqrt{\pi}}\int_0^p e^{z^2} dz\right)$ Summation is

performed in (4) over the electrons and ions of the plasma. For a hot beam and a cold plasma, the increment is given by

$$\frac{\gamma}{\omega} = -\frac{\omega - ku}{kS}\frac{\omega_0^2}{\omega^2}\frac{1}{2\varepsilon_{plasma} + \omega\partial\varepsilon_{plasma}/\partial\omega} \quad (5).$$

This expression is valid for a low density and a moderate temperature of the beam. $\gamma > 0$ holds for an anomalous Doppler effect. The beam is unstable, and the wave amplitude increases. For a normal Doppler effect one has $\gamma < 0$, i.e., instead of the buildup of the oscillation there occurs an attenuation. The author thanks V. D. Shafranov and R. Z. Sagdeyev for discussions. There are 1 figure and 12 references: 8 Soviet and 4 non-Soviet. The three most recent references to English-language publications read as follows: J. Aaron, C. Gustavsson, A. Egeland. Nature, 185, 148, 1960; M. Sugiura. Phys. Rev. Lett., 255, 1961. W. Murcray, J. Pope. Phys. Rev. Lett., 4, 5, 1960

SUBMITTED: June 27, 1960

Card 4/4

42143

S/203/62/002/004/004/018
I046/I242

AUTHOR: Gintsburg, M.A.

TITLE: Radioemission of solar corpuscular streams in the earth's atmosphere

PERIODICAL: Geomagnetizm i aeronomiya, v.2, no.4, 1962, 642-652

TEXT: Analysis of the radioemission of solar corpuscular streams in the 1 to 20 kilocycles range shows that at any given frequency the Cerenkov radiation is invariably accompanied by cyclotronic radiation and viceversa. The radiation-intensity formula derived in the isolated-ion approximation (which does not consider interaction with fields produced by the ion itself or by other ions) indicates that the Cerenkov radiation intensity tends to be equal to the radiation intensity of the first cyclotronic harmonic, and that the energy output is about the same for the first 10 to 20 harmonics. Contrary to Ondoh (Ref.5: J.Geomagn. and Geoelectric., 1961, 12, 77), the joint contribution of the cyclotronic harmonics is not less

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S/203/62/002/004/004/018
I046/I242

Radioemission of solar corpuscular...

than that of the Čerenkov radiation intensity. The radiation intensity of an isolated ion in atmospheric plasma ($W \approx 10^{-22}$ erg/sec) exceeds the radiation intensity of an ion in vacuum by a factor of about 10^{14}. Whereas the isolated-ion approximation does not differentiate between superlight and hyperlight motion in the corpuscular stream, the kinetic approximation used in the analysis of the wave amplification factor in plasma, L, shows that interactions between ions result in instabilities ($L > 0$) in the first case and damping ($L < 0$) in the second case. There is 1 figure.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, the Ionosphere and Propagation of Radio Waves, AS USSR)

SUBMITTED: April 2, 1962

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S/203/62/002/006/015/020
A160/A101

3.7110

AUTHOR: Gintsburg, M. A.

TITLE: Electromagnetic oscillations in the terrestrial region

PERIODICAL: Geomagnetizm i aeronomiya, v. 2, no. 6, 1962, 1142

TEXT: The author briefly deals with magnetic oscillations in the terrestrial region formed by the magnetic sphere of the Earth in the solar corpuscular beam and whose dimensions on the night side are greater than on the day side. In case the size of the region on the day side is determined by the condition

$$H^2_{day} = 8\pi Mu^2 N,$$

where H_{day} is the magnetic field, M - the mass of the proton, u - the directed beam velocity, and N - its density, the length of the rear body on the night side is determined by two effects. The fist effect, the pressure of the plasma p, yields the condition

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$$H^2_{night} = 8\pi u^2_T MN,$$

where u_T is the heat velocity of the beam ions. The second effect is as follows. The body, moving in the plasma, ejects in the latter a certain volume. The filling of the vacuum behind the body takes place at a speed corresponding to the heat velocity of the ions. Therefore, a vacuum region, a so-called rear cone, arises behind the body which moves at a speed that is higher than the heat velocity of the plasma ions. The radius r_0 of the moving "body" is determined in the given case by the condition

$$H^2(r_0) = 8\pi Mu^2N,$$

where $r_0 \approx 8 \div 10$ of the terrestrial radii. Standing hydromagnetic waves in the terrestrial resonator have to have different periods on the day and night sides. Since the conductivity and the losses are greatest in the lower ionosphere, oscillations with a node may possibly occur on the surface of the Earth. The second node will by on the day or the night side of the terrestrial region. In the first case, the dimensions of the resonator are smaller than in the second case. Correspondingly, the period is also shorter. The first-type oscillations are so-called pc magnetic-field micropulsations, the second-type oscillations lead

S/203/62/002/006/015/020
A160/A101

Electromagnetic oscillations in the terrestrial region

to pt micropulsations.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetizm, Ionosphere and Radiowave Propagation, AS USSR)

SUBMITTED: July 8, 1962

Card 3/3

GINTSBURG, M.A.

Addition to the brief report "Tensor of the electric permeability of plasma with a beam" published in "Radiotekhnika i Elektronika" no.12 1960. Radiotekh. i electron. 7 no.2:360 F '62. (MIRA 15:1)
(Plasma (Ionized gases)) (Electron beams)

S/203/63/003/002/020/027
D207/D307

AUTHOR: Gintsburg, M.A.

TITLE: Determination of all three components of the static magnetic field vector from its modulus

PERIODICAL: Geomagnetizm i aeronomiya, v. 3, no. 2, 1963, 374

TEXT: The modulus $|H|$ of the magnetic field vector $\vec{H}$ can be determined more accurately than the direction of H and there are more instruments with which the modulus can be measured. The author shows that the three components of H can be found from the spatial distribution of the modulus because it obeys the well-known eikonal equation

$$\left(\frac{\partial\varphi}{\partial x}\right)^2 + \left(\frac{\partial\varphi}{\partial y}\right)^2 + \left(\frac{\partial\varphi}{\partial z}\right)^2 = |H|^2 \quad (|H|^2 = f(x,y,z)), \quad (2)$$

for which there are known methods of solution. If the vector $\vec{H} = -\operatorname{grad}\varphi$ is known at several points, all the three components of the vector can be determined at these points.

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S/203/63/003/002/020/027
D207/D307

Determination of all three ...

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR (Institut for Terrestrial Magnetism, Ionosphere and Radiowave Propagation, AS USSR)

SUBMITTED: August 25, 1962

Card 2/2

GINTSBURG, M.A.

Low-frequency waves in a multicomponent plasma. Geomag. i aer. 3 no.4 :757-761 Jl-Ag '63. (MIRA 16:11)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR.

ACCESSION NR: AP4001838 S/0203/63/003/006/1127/1128

AUTHOR: Gintsburg, M. A.

TITLE: Head shock wave in front of the earth and its influence on the radiation belts

SOURCE: Geomagnetizm i aeronomiya, v. 3, no. 6, 1963, 1127-1128

TOPIC TAGS: radiation belt, earth shock wave, Pioneer I, plasma wave, electron concentration, galactic radio emission, relativistic electron, Fermi mechanism, plasma wave generation, head shock wave, shock wave radiation belt interaction, astronomy, Van Allen radiation belt, galactic radio noise, extraterrestrial radio waves

ABSTRACT: In Part One the author tries to clarify a paradox on the magnetic field pulse obtained on the basis of data from Pioneer I by C. Sonett (J. Geophys. Res., 1963, 68, 1265). He shows that the pulse systems observed by Pioneer I and V at 12 to 24 earth radii are nothing more than collisionless head shock-wave fronts which are fixed relative to the earth but move relative to the solar corpuscular plasma flow with speeds $u = 3$ to 5×10^7 cm/sec. In Part Two the

ACCESSION NR: AP4001838

author reviews the possibility of plasma wave generation in the shock wave that can accelerate electrons from a 30-kev energy to 3-Mev energy in 10^5 seconds at solar wind temperatures of 10^5K. Orig. art. has: 2 formulas.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery# i rasprostraneniya radiovoln AN SSSR (Institute of Terrestrial Magnetism, Ionosphere, and Radio Wave Propagation, AN SSSR)

SUBMITTED: 25May63 DATE ACQ: 17Dec63 ENCL: 00

SUB CODE: AS NO REF SOV: 004 OTHER: 004

Card 2/2

GINTSBURG, M.A.

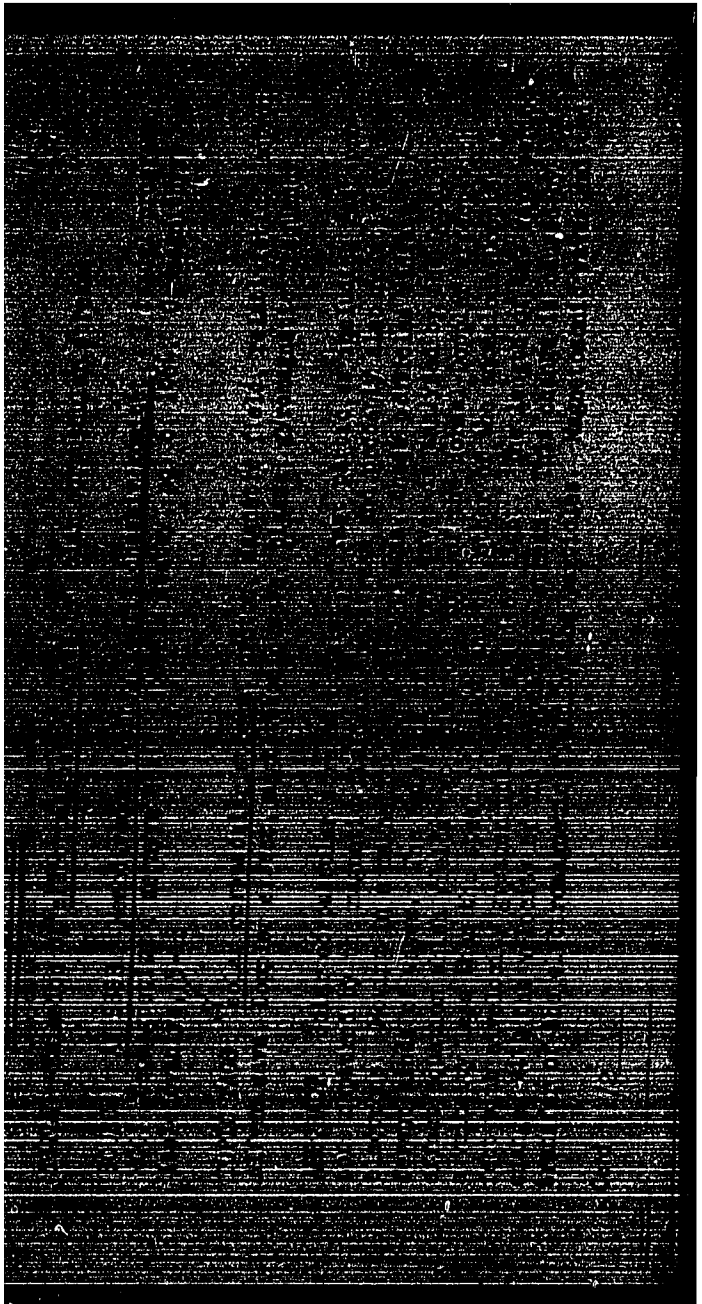
Structure of the equations of cosmic electrodynamics. Astron.zhur. 40 no.4:703-709 Jl-Ag '63. (MIRA 16:8)

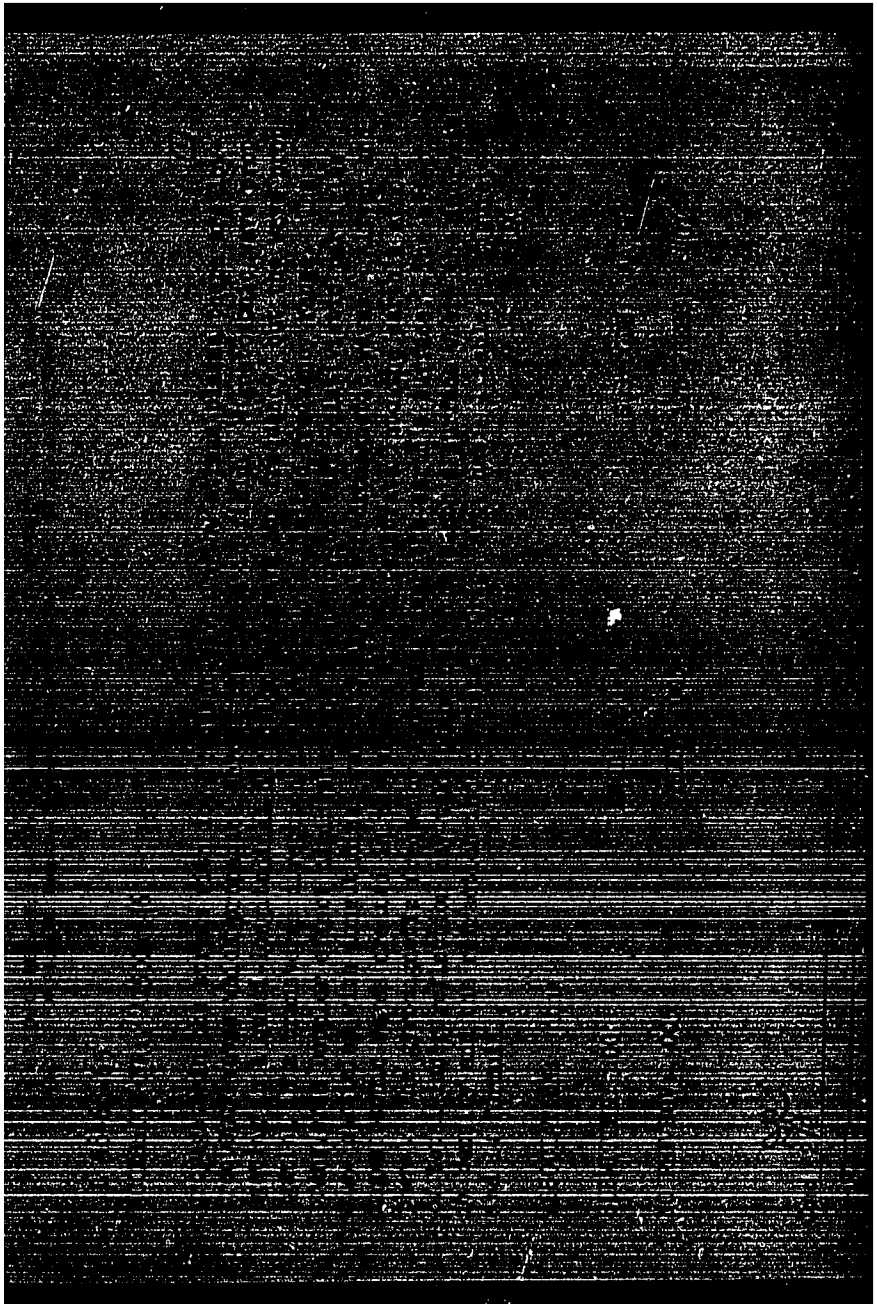
1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR.
(Magnetic fields (Cosmic physics)) (Differential equations)

PIKEL'NER, S.B.; GINTSBURG, M.A.

Mechanism of type-2 bursts of solar radio emission. Astron. zhur. 40 no.5:842-846 S-O '63. (MIRA 16:11)

1. Gosudarstvennyy astronomicheskiy institut im. P.K. Shternberga i Institut zemnogo magnetizma, ionosfery i radio AN SSSR.





L [illegible] EED/EWT(1)/EEC(t)/[illegible] Pa-5/Pi-4/Po-4/Pq-4/Pae-2 [illegible] 09/GS
ACCESSION NR: AP4 [illegible] S/0203/64/002/001/0064/0070

AUTHOR: [illegible] M. A.

TITLE: Radio emission from [illegible] waves [illegible] the earth and in the interplanetary gas

SOURCE: Geomagnetizm i aeronomiya, v. [illegible] no. 1, 1964, 64-70

TOPIC TAGS: radio emission, [illegible] wave, [illegible] shock wave, interplanetary gas, radiation belt, solar corpuscular stream

ABSTRACT: A new [illegible] emission in the range 10-50 km [illegible] which originates from a [illegible] shock wave [illegible] planets and from the turbulent trail of the [illegible] wave and the accompanying radio emission occur when a solar corpuscular [illegible] around the bodies of the solar system, both with and without [illegible] enclosure shows this phenomenon for [illegible]. The [illegible]

... and that from a bow shock wave

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Card 1/3

ACCESSION NR: AP4026[illegible]

when the illuminated surface of the planet is turned toward the earth or when the moon is full. At intermediate phases there will be a combination of the two types of emission. The problem of ...

ACCESSION NR: [illegible]

SUBMITTED: [illegible]

SUB CODE: [illegible]

NO REF SOV: 004

OTHER: 006

ENCL: 01

Card 2/3

APPROVED FOR RELEASE: [illegible] CIA-RDP86-00513R000515120008-9

L [illegible]-65
ACCESSION NR: AP40[illegible]

When the illuminated surface of the [illegible] is turned toward the earth or when the moon is full. At intermediate phases there will be a combination of the two types of emission. The problem of experimental detection of [illegible] emission is discussed. The investigation of such low-frequency [illegible] is generally possible only from satellites and rockets at a distance of [illegible] from the earth; another possible means would be observation [illegible]. Other effects caused by the shock wave are also discussed. Orig. art. has: 1 formulas, 1 figure, and 1 tables.

ASSOCIATION: none

SUBMITTED: 10Sep63 ENCL: 01

SUB CODE: AA, EC NO REF SOV: 01[illegible] OTHER: 005

L 11179-65
ACCESSION NR: AP40[illegible]

When the illuminated surface of the moon is turned toward the earth or when the moon is full. At intervals the picture there will be a combination of the two types of emission. The problem of experimental [illegible] of this emission is discussed. The investigation of such low-frequency radio emission [illegible] is generally possible only from satellites and rockets at a distance [illegible] from the earth; another possible method would be observations made in the Arctic and Antarctic. Other effects caused by the shock wave are also discussed. Orig. art. has: 12 formulas, 1 figure, and 2 tables.

ASSOCIATION: none

SUBMITTED: 19Sep63 ENCL: 01

SUB CODE: AA, EC NO REF SOV: 012 OTHER: 006

L [illegible]-65
ACCESSION NR: AP40[illegible]

when the illuminated surface of the planet is turned toward the earth or when the moon is full. At intermediate phases there will be a combination of the two types of emission. The problem of experimental detection of this radiation is discussed. The investigation of such low-frequency radiation [illegible] is generally possible only from satellites and rockets [illegible] from the earth another possible [illegible] could be [illegible] made in the Arctic and Antarctic. Other effects caused by the shock wave are also discussed. Orig. art. has: 12 formulas, 1 figure, and 2 tables.

ASSOCIATION: none

SUBMITTED: 10Sep63 ENCL: 01

SUB CODE: AA, EC NO REF SOV: 012 OTHER: 006

L [illegible]-65
ACCESSION NR: AP4036[illegible]

When the illuminated surface of the planet is turned toward the earth or when the moon is full. At intermediate phases there will be a combination of the two types of emission. The problem of experimental detection of this radiation is discussed. The investigation of such low-frequency radio emission [illegible] is generally possible only from satellites and rockets at a distance of [illegible] from the earth; another possible means would be observations made in the Arctic and Antarctic. Other effects caused by the shock wave are also discussed. Orig. art. has: 11 formulas, 1 figure, and 2 tables.

ASSOCIATION: none

SUBMITTED: 10Sep63 ENCL: 01

SUB CODE: AA, EC NO REF SOV: 013 OTHER: 006

L [illegible]-65
ACCESSION NR: AP[illegible]

When the illuminated surface of the moon is turned toward the earth or when the moon is full. At intermediate phases there will be a combination of the two types of emission. The problem of experimental detection of this emission is discussed. The investigation of such low-frequency radio emission of the moon is generally possible only from satellites and rockets at a distance of [illegible] from the earth; another possible method would be observations made in the Arctic and Antarctic. Other effects caused by the shock wave are also discussed. Orig. art. has: 12 formulas, 1 figure, and 2 tables.

ASSOCIATION: none

SUBMITTED: 18Sep63 ENCL: 01

SUB CODE: AA, EC NO REF SOV: 012 OTHER: 006

L [illegible]-65
ACCESSION NR: AP[illegible]

When the illuminated surface of the [illegible] is turned toward the earth or when the moon is full. At intermediate phases, there will be a combination of the two types of emission. The problem of experimental detection of [illegible] emission is discussed. The investigation of such low-frequency radio emission of [illegible] is generally possible only from satellites and rockets at a distance of [illegible] km or more from the earth; another possible means would be observations made in the Arctic and Antarctic. Other effects caused by the shock wave are also discussed. Orig. art. has: 14 formulas, 1 figure, and 2 tables.

ASSOCIATION: none

SUBMITTED: 10Sep63 ENCL: 01

SUB CODE: AA, EC NO REF SOV: 01[illegible] OTHER: 006

L [illegible]-65
ACCESSION NR: AP4028235

when the illuminated surface of the planet is turned toward the earth or when the moon is full. At intermediate phases there will be a combination of the two types of emission. The problem of experimental detection of this emission is discussed. The investigation of such low-frequency radio emission of the planets is generally possible only from satellites and rockets at a distance of [illegible] from the earth; another possible means would be observations in the [illegible] Arctic and Antarctic. Other effects caused by the shock wave are also discussed. Orig. art. has: 14 formulas, 1 figure, and 3 tables.

ASSOCIATION: none

SUBMITTED: 10Dec63 ENCL: 01

SUB CODE: AA, EC NO REF SOV: 012 OTHER: 006

L [illegible]-65
ACCESSION NR: AP4[illegible]

when the illuminated surface of the planet is turned toward the earth or when the moon is full. At intermediate phases there will be a combination of the two types of emission. The problem of experimental detection of this emission is discussed. The investigation of such low-frequency radio emission from planets is generally possible only from satellites and rockets at a distance of [illegible] km or more from the earth; another possible method would be observations made in the Arctic and Antarctic. Other effects caused by the [illegible] waves are also discussed. Orig. art. has: 31 formulas, 1 figure, and 2 tables.

ASSOCIATION: none

SUBMITTED: 10Sep63 ENCL: 01

SUB CODE: AA, EC NO REF SOV: 01[illegible] OTHER: 006

L 18179-65
ACCESSION NR: AP4028885

when the illuminated surface of the moon is turned toward the earth or when the moon is full. At intermediate phases there will be a combination of the two types of emission. The problem of discovering [illegible] of this radiation is discussed. The investigation of such low-frequency radio emission [illegible] is generally possible only from satellites and rockets [illegible] from the earth; another possible method would be observation [illegible] Arctic and Antarctic. Other effects caused by the shock wave are also discussed. Orig. art. has: 11 formulas, 1 figure, and 2 tables.

ASSOCIATION: none

SUBMITTED: 10Sep63 ENCL: 01

SUB CODE: AA, SC NO REF SOV: 012 OTHER: 006

Card 2/3

L 1ul79-65
ACCESSION NR: AP4026295

when the illuminated surface of the planet is turned toward the earth or when the moon is full. At intermediate phases there will be a combination of the two types of emission. The problem of experimental detection of this emission is discussed. The investigation of such low-frequency radio emission of the planets is generally possible only from satellites and rockets at a distance of 10^5 km or more from the earth; another possible means would be observations made in the Arctic and Antarctic. Other effects caused by the shock wave are also discussed. Orig. art. has: 12 formulas, 1 figure, and 2 tables.

ASSOCIATION: none

SUBMITTED: 10Sep63 ENCL: 01

SUB CODE: AA, EC NO REF SOV: 012 OTHER: 006

Card 2/3

L 11179-65
ACCESSION NR: AP4026236

ENCLOSURE: 01

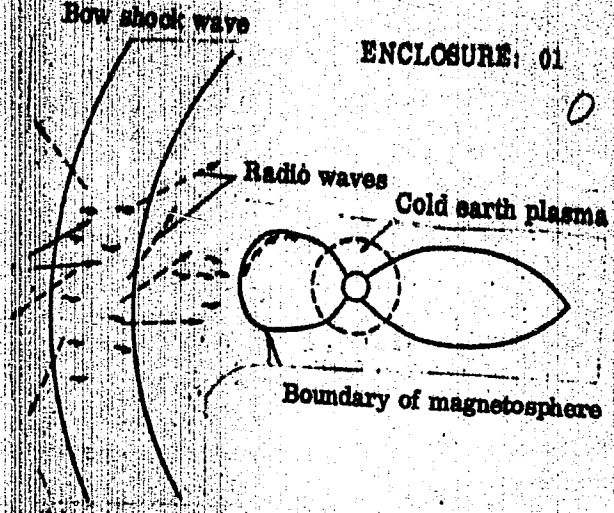

Fig. 1. Radio emission effect of the earth's corpuscular-stream bow-shock wave.

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

S/0057/64/034/005/0818/0820

ACCESSION NR: AP4035689

AUTHOR: Vinnikova, T.L.; Gintsburg, M.A.

TITLE: Spectrum of the surface waves at the boundary between the vacuum and a magnetized plasma

SOURCE: Zhurnal tekhnicheskoy fiziki, v.34, no.5, 1964, 818-820

TOPIC TAGS: plasma, surface wave, plasma physics, plasma wave dispersion

ABSTRACT: The dispersion equation for surface waves at the plane boundary between the vacuum and a plasma in a uniform magnetic field parallel to the boundary was solved numerically for various values of the parameters, and some of the results are presented in graphical and tabular form. Only solutions for waves propagating transversely to the magnetic field are discussed. The dispersion equation was derived earlier (M.A.Gintsburg,Tr.Inst.zemnogo magnetizma, ionosfery* i rasprostraneniya voln AN SSSR,No.17,p.208,1960) and it is valid only for a sharp boundary, for which the electron Larmor radius is less than the penetration depth of the wave into the vacuum. The limiting frequencies for which this condition is satisfied are tabulated for several values of the thermal velocity and magnetic field. The phase velocity

Card 1/2

Pac-4/Pae-2/Pob IJP(c) AT/ASD/WH/RB/GW/WS-4

ACCESSION NR: AP5009066 UR/0293/65/003/002/0340/0342

AUTHOR: Ginzburg, M. A.

TITLE: Radiowave propagation in a moving cosmic plasma

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 2, 1965, 340-342

TOPIC TAGS: plasma, radiowave propagation, magnetic satellite sounding, shockwave theory, ionosphere electromagnetic property, refractive index, electric permeability

ABSTRACT: The author considers the fact that the cosmic plasma about the Earth is in a state of constant motion. Equations are derived for the calculation of the electrical permeability ε_{ik} and the index of refraction for moving plasma. The parameters involved are the constant velocity of particles of a given sort (electrons, ions), the component of their velocity caused by the variable field of the wave, the magnetic field of the wave, and the constant external magnetic field. In accordance with the expressions derived, the phase velocity and polarization of radio waves in such a plasma with current will differ from those in a plasma without current. The magnetic field in the region of 12 - 14 earth radii is considered in part on the basis of information derived from "Pioneer-1" and "Explorer-12" data. The author claims that electrons, accelerated in oblique pulses (and also

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

in similar non-linear waves of more complex form) with energy levels up to the order of 1 kev, penetrate into the ionosphere. The mechanism of the aurora borealis is explained in this way. These electrons also function as the source of the nocturnal ionospheric ionization. Pulse velocity increases with amplitude, while pulse asymmetry is related to the dissipation and instability in the movement of electrons with respect to ions. The longitudinal oscillations which arise are transformed into transverse waves with a frequency of $\omega_{0,i} \approx$ 500-700 cycles. In

feature of the radio radiation of a leading shockwave. Orig. art. has: 12 formulas

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

ASSOCIATION: None

SUBMITTED: 27Apr64 ENCL: 00 SUB CODE: AA, EM

NO REF SOV: 005 OTHER: 001

Card 2/2

L 46921-66 EWT(1)/T

ACC NR: AR6015217 SOURCE CODE: UR/0269/65/000/012/0053/0054

AUTHOR: Gintsburg, M. A.

ORG: none

TITLE: Irradiation of electromagnetic waves by solar corpuscular streams

SOURCE: Ref. zh. Astronomiya, Abs. 12.51.414

REF SOURCE: Sb. Geomagnitn. issledovaniya. No. 6. M., Nauka, 1964, 5-13

TOPIC TAGS: sun, electromagnetic wave, corpuscular stream, solar particle, Doppler effect, Cerenkov effect, magnetoactive plasma, Alfven wave, proton, earth, relativistic electron, cyclotron radiation

ABSTRACT: On the basis of formulas for the Doppler effect and the Cerenkov effect, plasma frequencies are calculated at which the radiation of electromagnetic waves must be expected. These waves appear during the movement of high-velocity particles in magnetoactive plasma. Frequencies for the Alfven and magneto-acoustic waves, the Cerenkov radiation of the magnetoacoustic wave, and the slow extraordinary wave during the movement of fast protons are evaluated. The

Card 1/2 UDC: 523.75:523.165

ACC NR: AR6015217

cyclotronic radiation of Alfven and magnetoacoustic waves is examined for relativistic electrons. A diagram of frequency ranges of the types of radiation examined is presented in the original paper. Attention is called to the difference in radiation frequencies of corpuscular streams on the night side of the Earth and on its day side. The appendix includes a conclusion on the dependence of the wave frequency upon the direction of its radiation. The bibliography has 10 titles.

[GC]

SUB CODE: 03, 20/

Card 2/2 fv

[illegible]/[illegible]

ACC NR: [illegible]7600308[illegible] SOURCE CODE: [illegible]/0293/66/[illegible]/[illegible]/0296/0301

AUTHOR: [illegible], M. A.

ORG: [illegible]

TITLE: Interpretation of magnetic measurements in 'Pioneer-I' and its geophysical [illegible]

SOURCE: Kosmicheskiye issledovaniya, v. [illegible], no. [illegible], 1966, [illegible]96-301

TOPIC TAGS: shock wave, geophysics

ABSTRACT: A [illegible] shock wave near the earth is [illegible] because it is oblique. An oblique shock wave consists of oblique isolated impulses. The first part of this article gives an analysis of the properties of [illegible] impulses (amplitude, polarization) as a function of velocity and [illegible]. The second part develops the hypothesis that acceleration in the neighborhood of the earth for [illegible] electrons (E~1 keV, third [illegible] belt of charged particles, auroral electrons, and electrons ionizing the [illegible] ionosphere), and also electrons with energies E≥40 keV ([illegible] radiation belt), occurs in such oblique impulses. The author presents experimental confirmations of this hypothesis and various morph[illegible] [illegible] conclusions. Orig. art. has: 1 figure and 5 formulas. [illegible]: 37,710]

SUB CODE: 08 / SUBM DATE: 05Jan65 / ORIG REF: 010 / OTH REF: 011

[illegible] UDC: 523.72

L 00907-67 EWT(1)/FCC GW/GM

ACC NR: AP6019669 SOURCE CODE: UR/0033/66/043/003/0550/0552

AUTHOR: Gintsburg, M. A.

ORG: Institute of Terrestrial Magnetism, Ionosphere, and Radiowave Propagation, Academy of Sciences SSSR (In-t zemnogo magnetizma ionosfery i rasprostraneniya radiovoln Akademii nauk SSSR)

TITLE: Acceleration of particles in cosmic plasma

SOURCE: Astronomicheskiy zhurnal, v. 43, no. 3, 1966, 550-552

TOPIC TAGS: cosmic plasma, particle acceleration, nonlinear plasma wave, solitary wave

ABSTRACT: The process of electron and ion acceleration by nonlinear waves in cosmic plasmas is analyzed. It is shown that electron and ion accelerations can be achieved through solitary wave pulses (solitons). In nonrelativistic solitons, the energy imparted to electrons and ions, respectively, is given by

$$\frac{\cos\theta}{\sqrt{2}}\sqrt{M/m} > \mathfrak{M} > \frac{\cos\theta}{2}\sqrt{M/m}; \quad H_f = H_0\mathfrak{M}\sqrt{2};$$

$$E_{f,e} = \frac{mv_\perp^2 f}{2} = \frac{1}{2}\frac{H_f^2}{8\pi n_0} = \frac{Mu_0^2}{2},$$

$$E_{f,i} = \frac{Mc^2}{2}\frac{R^2}{(R^2+1)^2}(1+2R^2)^2 \quad (R = v_A/c).$$

Card 1/2

UDC: 523.165

L 00907-66 APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

ACC NR: AP6019669

The nature of the solitons is discussed briefly. Their origin is attributed to strong, turbulent, nonuniform plasmas which are collisionless. Examples of such plasmas are those found in areas ahead of a planet colliding with supersonic streams of solar winds. When the amplitude of the soliton reaches 400 γ at θ = 0, it can penetrate the magnetosphere of a planet (Earth or Jupiter) with the subsequent generation of radiation belts. Orig. art. has: 3 formulas.

SUB CODE: 03, 20, 04/ SUBM DATE: 11Sep65/ ORIG REF: 005/ OTH REF: 007

bs

Card 2/2

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9

GINZBURG M

Proteinases (cathepsin) in the tissues of the infantile organism with dysentery and toxic dyspepsia. B. Goldshtein and M. Ginzburg. *Ukrain. Biochem. Zhur.* 7, No. 3-4, 147-59(1935).- The cathepsin per g. of dry matter is less than normal in glycerol exts. of liver, kidney and spleen of children who have died of toxic dyspepsia. B C A

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

PRINCIPLES AND PROPERTIES

11e

Tissue proteases (cathepsin) in protein deficiency. Boris Gol'dshtein and M. Gintsburg. *Ukrain. Biokhem. Zhur.* 9, 341-8(in Russian 343-53, in German 353-4) (1936); cf. *C. A.* 30, 5943[a]; cf. *Ukrain. Biokhem. Zhur* VII, No. 1 (1934); VIII, No. 3; VII, No. 3 (1934).—The concn. of cathepsin in rabbit liver and kidneys is higher than normal in protein deficiency. The difference between cathepsin unactivated and activated with H_2S also is much increased, especially in the liver. It is concluded that when protein synthesis predominates over hydrolysis, a considerable activating action of SH groups of the cathepsin takes place, and, that when hydrolysis predominates, there is a depressing action. Protein synthesis in rabbit liver is obviously increased on a deficient protein diet.

H. F. Stefanowsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

The mechanism of antimalarial action of quinine. V. S. Galkin, M. Ginzburg, R. C. Averbukh and V. A. Kostroman. *Bull. biol. méd. exptl. U. R. S. S.* 1, 441-2 (1936); *Rev. sci. Physiol. expl. Pharmakol.* 96, 632. Quinine is only slightly toxic for plasmodia and concns. above 1:2500 in the blood are required to assist in the treatment of malaria. Quinine specifically changes the nervous system, after several large daily doses, rendering it refractory to the action of malaria. I. A. M.

CA 11F

Proteinases (cathepsin) in tissues of the hen embryo B. Gol'dshtein and M. Gintsburg. *Ukrain. Biokhem. Zhur.* 9, 593-8 (in Russian 599-611, in German 612) (1936). -The cathepsic action of glycerol exts. from embryonal membranes on gelatin becomes evident on the 9th day of incubation. Highest values of the proteolytic action are attained speedily and are maintained at about the same level until the last days of incubation. The difference of unactivated cathepsin and that activated by H_2S in the exts. investigated is great, especially in the first days of its appearance. The cathepsin values and the character of the activating action of H_2S are similar to those observed with placenta cathepsin. F. E. Stefanowsky

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

PROCESSES AND PROPERTIES INDEX

Ca

11A

Cathepsin in the tissues of the embryo and mother II. Boris Gol'dshtein and M. Gintsburg. *Biochem. J.* (Ukraine) 10, 647-58 (in Russian 658-61; in English 661-2)(1937).—H_2S has no activating effect on freshly prepd. liver cathepsin exts. of normal and pregnant rabbits. After the exts. from a pregnant rabbit have been kept in a refrigerator for several days, a considerable activating effect of H_2S on the cathepsin is noted. In exts. of a normal animal this effect appears not at all or considerably later and to a smaller degree. Reduced glutathione disappears from the liver exts. of the pregnant animal more rapidly than from those of a normal female rabbit. However, the activating effect of H_2S on cathepsin appears later than the disappearance of the glutathione. Therefore it is assumed that this disappearance does not play the leading part in the activation of cathepsin in exts. The cathepsin concn. in the extracts is higher in the pregnant than in the normal animal. F. F. Stefanowsky

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Proteinase (cathepsin) in tissues of a chick embryo II Boris Goldshtein and M. Ginzburg. *Biochem. J.* (Ukraine) **11**, 65-70(in Russian 70; in German 71) (1938); cf. *C. A.* **31**, 3127⁹, 3972⁹. During the development of the embryo cathepsin forms in the yolk sack, it is evidently absent from the yolk, the amniotic and the allantoic fluids. The cathepsin of the embryonic membrane of an egg has a great hydrolytic effect on the yolk and specificity toward albumin and globulin in the white of the egg, whereas, the cathepsin of the organs of mammals has no hydrolytic effect on these compds.

P. F. Stefanowsky

ASSLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 - CIA-RDP86-00513R000515120008-9"

PROCESSES AND PROPERTIES INDEX

BC

a-4

Specificity of tissue proteinases (cathepsins). B. Gol[illegible], M. G[illegible], and E. Milgram (Ukraine, [illegible]).—[illegible] do not dig[illegible] which [illegible] the ex- hydrolysis [illegible] the homologous tissue- [illegible] ovalbumin- protein [illegible] production of NH_3- cathepsin [illegible] is un- acids [illegible] that these affected by [illegible] substrate. cathepsins [illegible] ovalbumin The rate [illegible] rises in the [illegible] < < C. [illegible] < [illegible] cathepsins. It is concluded that the higher [illegible] in the evolutionary scale, the greater is the specificity of its tissue proteinases. Physiological changes in the animal affect the specificity of cathepsins; thus liver cathepsin from pregnant rabbits hydrolyses ovalbumin. The same property is conferred on ordinary rabbit liver cathepsin by addition of heat-inactivated yolk sac cathepsin. R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PROCESSES AND PROPERTIES INDEX

Cathepsin and glutathione in the liver of normal rabbits and in hyperthyreosis. Boris Gol'dshtein, M. Gintsburg, and O. Sheves. *Biochem. J.* (Ukraine) 12, 385-401 (in Russian, 401-6; in English, 407-11)(1938).—The cathepsin activity of extr. of the liver of rabbits fed with thyroid gland is greater than in normal rabbits. H_2S lowers the activity of the extracts, to a greater extent in the former than in the latter group. The activity of the exts. falls with time, and such exts are then activated by H_2S, to a greater extent in thyroid-fed animals; this effect is not paralleled by disappearance of reduced glutathione from the exts. The presence of activators of cathepsin other than glutathione is postulated. B. C. P. A.

A.S.M. S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

GINTSBURG, M.B.

Ca

11A

Regulation mechanism of the activation of tissue proteinases. II. Cathepsin, glutathione and ascorbic acid in the liver tissue of normal and hyperthyreosic rabbits M. B. Gintsburg and S. A. Kacherova. *Biochem. J.* (Ukraine) 16, 667-79 (in Russian, 479-83; in English, 484) (1940); cf. *C. A.* 33, 8253¹.—In normal rabbit liver exts. the proteolytic activity (I) reduction is insignificant after several days; H_2S depression remains unchanged. In hyperthyreosis (II), the reduction is sharp and H_2S again reactivates I to a considerable extent; glutathione (III) is lost from the exts., expti. and controls. Possibly, the cathepsin activity is regulated in normal rabbits simultaneously by the labile and stable (to oxidation) activators; after disappearance (oxidation) of III, I is supported by the stable activators. Hyperthyreosis, with the consequent intensification of the protein metabolism and oxidation processes, labilizes the stable activators; all the activators in the liver exts. are in a labile state and quickly disappear; the I drops sharply and H_2S restores it. By use of liver tissue in place of the exts., with no substrate, and, to eliminate the peptidase effect, hydrolyzing for 1 hr., when only the proteinase is active, the hydrolysis in II is greater, particularly in animals killed between January and July. Likewise, as with the exts., the addn. of H_2S to the controls reduces the hydrolysis, and this is intensified after 2-hr. aeration, in II, the gradual and strong depression caused by H_2S is reduced, and sometimes even reversed to activation after aeration. There is no difference with the III; 2-hr. aeration has no effect. There is less ascorbic acid (IV) in II, it is reduced, from 20 mg. % in December to 5 mg. % in February; season had no effect on the controls. There is an inverse relation between IV and III, increased IV corresponding to min. III; this may not be due to its disappearance from the tissues; the condition of hyperthyreosis stimulates the transformation of part of IV into a bound state, activating proteolysis. B. Gutoff

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

GINTSBURG, A. M.

Inst. Biochemistry, (-1944-).

Inst. Zoobiology, (-1944-).

"A Method for Obtaining of the Dry Dysenteric Bacteriophage,"

Zhur. Mikrobiol., Epidemiol., i Immunobiol., No. 10-11, 1944.

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9

GINTSBURG, M.B.

CA

11A

Changes of sulfur-containing amino acids within the protein molecule, and the influence of thyroid hormone. B. I. Col'dshtein, M. B. Gintsburg, E. A. Kolli, E. Yu. Mil'gram, and O. S. Sklovskaya (Inst. Exptl. Endocrinology, Moscow). *Biokhimiya* 11, 447-70(1946).—The changes in the SH groups and S-contg. amino acids in the muscle protein myosin were studied. During the prolonged extn. of myosin, some ATP always disappeared from the ext. The addn. of ATP lowered the SH content of myosin. It is postulated that during the enzymic hydrolysis of ATP there takes place a perpetual transfer (oscillation) of the S atom from one peptide chain to the other, thus producing the first phase of muscular contraction. The amt. of free SH groups in myosin and heptatosin increased during exptl. hyperthyroidism. This suggests that the thyroid hormone ruptures the thio ether linkages in proteins. The SH groups that are thereby formed are then oxidized. H. Priestley

USSR/Medicine - Biochemistry
Medicine - Cysteine

Sep/Oct 48

"Methods of Converting Methionine Into Cysteine," M. B. Gintsburg, Moscow, 10 pp

"Uspekh Soverm Biol" Vol XXVI, No 2 (5)

Conversion of methionine into cysteine proceeds in three stages: (1) demethylating methionine to homocysteine, (2) adding the homocysteine to serine and forming cystothionine thio ether, (3) breaking up the cystothionine with the aid of a ferment system including ATP into phosphohomoserin and cysteine. There is a possibility of forming

60/49T73

USSR/Medicine - Biochemistry (Contd) Sep/Oct 48

cysteine in the organism, i.e., from sulfur and sulfide by means of a desulfurase.

60/49T73

Gintsburg

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9

Properties of the [illegible] of reconstituted myosin. [illegible] (Inst. Exptl. Endocrinol., Moscow). [illegible] 21, [illegible] (1956)(in Russian). [illegible] was found a small percentage of [illegible] groups which were easily broken up by H_2S, creating conditions favorable for the [illegible] of the SH groups and their entering into the complex of myosin. Acid O does not [illegible] these groups [illegible] and only slightly after denaturation with urea. After myosin had been reconstituted with H_2S, [illegible] became enhanced. Destruction of the [illegible] union [illegible] the denatured myosin insol. in KCl. With the removal of the urea the soly. of the modified myosin in KCl was reestablished, despite the fact that urea alone had not rendered the denatured myosin insol. in KCl.

B. S. Levine

GINTSBURG, M.B.; PANDRE, Ye.M.; BIKUS, N.M.

Role of sulfhydryl groups and peroxides in the biological action of ionizing radiations [with summary in English]. Biokhimiia 22 no.3: 467-475 My-Je '57. (MIRA 10:11)

1. Ukrainskiy nauchno-issledovatel'skiy sanitarno-khimicheskiy institut, Kiyev.
(ROENTGEN RAYS, effects,
lethal dose, on peroxides & sulfhydryl cpds. metab. (Rus))
(SULFHYDRYL COMPOUNDS, metabolism,
eff. of x-rays, lethal dose (Rus))

GINTSBURG, M.B.

Effect of ionizing radiations on some nonprotein thio compounds in the anima organism [with summary in English]. Biokhimiia 23 no.6:840-844 N-D '58 (MIRA 11:12)

1. Ukrainskiy nauchno-issledovatel'skiy sanitarno-khimicheskiy institut, Kiyev.
(X RAYS--PHYSIOLOGICAL EFFECT)
(MERCAPTO GROUP)

PAVLOV, S.M.; GINTSBURG, M.G.; KOVALENKO, V.I., inzh., retsenzent; TIKHONOV, A.Ya., tekhn. red.

[Operation and repair of motorcycles] Ekspluatatsiia i remont mototsiklov. Izd.2., perer. i dop. Moskva, Mashgiz, 1953. 395 p. (MIRA 16:7)
(Motorcycles--Maintenance and repair)

AKIMOVA, N., GINTSBURG, M.

New method of heating the cold engine of a Moskvich automobile.
Avt.transp.33 no.10:33 O '55. (MLRA 9:1)
(Automobiles--Engines)

GINTSBURG, Matvey Grigor'yevich; PAVLOV, Serafim Mikhaylovich; BAUMAN, I.M., inzhener, redaktor; MODEL', B.I., tekhnicheskiy redaktor

[Operation and repair of motorcycles] Ekspluatatsiia i remont mototsiklov. Izd. 3-e, perer. i dop. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 428 p. (MLRA 9:7)
(Motorcycles)

GINZBURG, M.G.

IVANITSKIY, Svyatoslav Yur'yevich, inzh.; IGNATOV, Yuriy Vladimirovich, inzh.; KARMANOV, Boris Sergeyevich, inzh.; ROGOZHIN, Vsevolod Vyacheslavovich, inzh.; BEKMAN, V.V., inzh., retsenzent; GINTSBURG, M.G., retsenzent; SMELYANSKIY, V.A., inzh., red.; UVAROVA, A.V., tekhn.red.

[Motorcycles; construction, theory, design] Mototsikl; konstruktsiia, teoriia, raschet. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1958. 503 p. (MIRA 11:4)
(Motorcycles)

GINTSBURG, Matvey Grigor'yevich; KOVALENKO, V.I., insh., retsenzent; ABEZ'YANIN, D.N., retsenzent; TERENT'YEV, V.D., doktor tekhn. nauk, red.; NAKHIMSON, V.A., red.izd-va; TIKHANOV, A.Ya., tekhn. red.; UVAROVA, A.F., tekhn.red.

[Motorcycles; construction and servicing] Mototsikly; ustroistvo i obsluzhivanie. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1959. 286 p. (MIRA 12:4)
(Motorcycles)

AKIMOVA, V.I.; GINTSBURG, M.G.

Rally Moscow-Sevastopol-Moscow. Avtomobilist. 1:47-49 '61.
(MIRA 14:1)

(Automobile racing)

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

LOTOTSKIY, Aleksey Vladimirovich, inzh.; ZOBNIN, Vladimir Andreyevich, inzh.; KAMERILOV, Vladimir Konstantinovich, inzh.; SHMELEV, Oleg Filippovich, inzh.; GINTSBURG, M.G., red.; MAKHIMSON, V.A., red.izd-va; MIL'KIND, V.D., tekhn.red.

[Freight motor scooters] Gruzovye motorollery. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1961. 163 p. (MIRA 14:4)
(Motor scooters)

POPOV, Yakov Savel'yevich. Prinimali uchastiye: GINTSBURG, M.G.; MOROZ, R.P.; SILKIN, A.N.; SEDOV, A.V., red.; MANINA, M.P., tekhn. red.

[Handbook for a motorcycle driver] Sputnik mototsiklista. Moskva, Fizkul'tura i sport, 1963. 319 p.
(MIRA 17:2)

LEVINSON, Nikolay Grigor'yevich [deceased]; GEYDYSH, S.S., inzh., retsenzent; GINTSBURG, M.V., inzh., retsenzent; LUGOVOY, M.V., inzh., retsenzent; REZNIK, I.S., inzh., retsenzent; TROYANOVSKIY, V.V., inzh., retsenzent; TIMOFEYEVSKIY, T.P., inzh., red.; BARYKOVA, G.I., red.izd-va; MODEL', B.I., tekhn.red.

[Mechanization of management control (management technology)] Mekhanizatsiia upravlencheskogo truda (orgatekhnika). Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry. Vol.1. 1958. 386 p. (MIRA 12:2)
(Automatic control) (Industrial management)

L 34091-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JW/JG/RM

ACC NR: AP6012923 SOURCE CODE: UR/0020/66/167/005/1083/1086

AUTHOR: Ginsburg, V.A.; Medvedev, A.N.; Dubov, S.S.; Lebedeva, M.F. 63 B

ORG: none

TITLE: Electron transfer in reactions of nitroso compounds

SOURCE: AN SSSR. Doklady, v. 167, no. 5, 1966, 1083-1086

TOPIC TAGS: organic nitroso compound, free radical, EPR spectrum, electron donor

ABSTRACT: In a continuation of the study of electron transfer processes in donor-acceptor transformations of nitroso compounds, the following systems consisting of trifluoronitrosomethane and typical nucleophilic compounds were analyzed: (A) CF_3NO + amines ($(C_2H_5)_3N$; C_5H_5N; $C_6H_5NH_2$; $C_6H_5NHCH_3$; $C_6H_5N(CH_3)_2$); (B) $CF_3NO + C_6H_5SH$; (C) CF_3NO + $(iso\text{-}C_4H_9O)_3P$; (D) CF_3NO + RNNO; R = $((CH_3)_2$, $(C_2H_5)_2$); (E) $CF_3NO + (CH_3)_2CClNO$, and also (F) $CF_3NO + C_2H_5ONO$; (G) CF_3NO + aldehydes (CH_3CHO, C_3H_7CHO, C_6H_5CHO). In these systems, in the temperature range from -160 to +20C, EPR spectra were obtained, indicating a radical nature of the transformations taking place. The signals are attributed to ion radicals of the type $CF_3\overset{|}{\underset{|}{N}}\text{-}\overset{|}{\underset{O}{D}}$ (where D is the donor molecule) and CF_3NO^-, and also to products of secondary reactions. The formation of these ion radicals in systems A-F indicates that oxidation-reduction processes occur during the initial stages of the reaction between the nitroso compound and the nucleophilic molecule, the latter acting as the electron donor. The

Card 1/2 UDC: 543.878

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

L 34091-66

ACC NR: AP6012923 O

paper was presented by Academician Voyevodskiy, V.V., 26 Jul 65. Orig. art. has: 2 figures.

SUB CODE: 07 / SUBM DATE: 02Jun65 / ORIG REF: 007

Card 2/2 vmb

CHALIKOV, Anatoliy Viktorovich; VARSHAVSKIY, V.I., nauchn. red.; GINTSBURG, V.I., ved. red.

[Programming of design calculations] Programmirovanie proektnykh raschetov. Leningrad, Izd-vo "Nedra," 1964. 113 p. (MIRA 17:7)

GRACHEV, Rostislav Ivanovich; BROYTMAN, Roman Yakovlevich; VYSHCHAKO, Igor' Aleksandrovich; ROZENBERG, Nikolay Mikhaylovich; LEYBSON, M.G., nauchnyy red.; GINTSBURG, V.I., vedushchiy red.

[Determining the efficiency of geological prospecting; methodological instructions]. Opredelenie effektivnosti geologorazvedochnykh rabot; metodicheskie ukazaniia. Leningrad, Nedra, 1964. 84 p. (Leningrad. Vsesoiuznyi neftianoi nauchno-issledovatel'skii geologorazvedochnyi institut. Trudy, no. 229) (MIRA 17:6)

32-7-25/49

AUTHOR: Gintsburg, V. S.

TITLE: On the Third Period of the Creeping (of Metals and Alloys) and Relaxation of Stress. (O tret'yem periode polzuchesti i relaksatsii napryazheniy).

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 7, pp. 838-842 (USSR)

ABSTRACT: Relaxation stress can be determined in those cases of a state of stress which favor a decrease of the solid and an increase of the plastic deformation. The "creeping" of metals and alloys is investigated at conditions favoring unlimited deformation and may be observed with diminishing relaxation stress and with the constancy of general deformation. This fact makes it possible to apply the rules of creeping to the phenomenon of relaxation stress. The third period of creeping can be determined only at high temperatures (critical temperature). Investigations carried out at a temperature of 650° resulted in the following arrangement of diagram curves and gave the following results:

1) Diagram curves of tungsten- and niobium alloys, which show the greatest resistance against stigmatization, show a much slower development of the III.period of creeping.

2) Diagram curves of niobium alloys with an average degree of resistance against stigmatization show a more rapid development of the III.period.

3) Diagram curves of tungsten alloys with an inclination towards

On the Third Period of the Creeping (of Metals and Alloys) and Relaxation of Stress. 32-7-25/49

intense stigmatization showed the fastest development of the III. period. The phenomenon of the III.period of creeping and relaxation stress is a property of every substance that possesses the ability of viscous flow. There are 6 figures.

AVAILABLE Library of Congress.

Card 2/2

GAMBURG, P.Yu., red.; GINTSBURG, V.B., red.; VINOGRADOVA, G.M., red. izd-va; OSENKO, L.M., tekhn. red.

[Improving the design and planning of ventilation, heating and heat supply of industrial buildings] Uluchshenie proektirovaniia ventiliatsii, otopleniia i teplosnabzheniia promyshlennykh zdanii. Moskva, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1960. 94 p. (MIRA 14:10)

1. Nauchno-tekhnicheskoye obshchestvo stroitel'noy industrii SSSR.
(Industrial buildings--Heating and ventilation)

MIKHEYEV, Vikentiy Pavlovich; VENEDIKTOV, Aleksey Vladimirovich; GLOZSHTEYN, Ya.S., nauchn. red.; GINTSBURG, V.I., ved. red.

[Jet burners for natural gas with active air spray] Inzhektsionnye gorelki dlia prirodnogo gaza s aktivnoi vozdushnoi struei. Leningrad, Izd-vo "Nedra," 1964. 92 p.
(MIRA 17:4)

ANIKIYEV, Kirill Aleksandrovich; GINTSBURG, V.I., vedushchiy red.; KRUGLIKOV, N.M., red.

[Unusually high reservoir pressures in oil and gas fields.] Anomal'no-vysokie plastovye davleniia v neftianykh i gazovykh mestorozhdeniiakh. Leningrad, Nedra, 1964. 166p. (Leningrad. Vsesoiuznyi neftianoi nauchno-issledovatel'skii geologorazvedochnyi institut. Trudy, no.233).

(MIRA 17:10)

GINTSBURG, V.S.

Enlarging brigades. Sudostroenie 23 no.9:57-58 S '57. (MIRA 10:12)
(Shipbuilding workers)

USSR/Engineering - Welding

Feb 52

"Weldability and Crack Formation Tendency During Welding," Docent Ya. A. Gintsburg, Cand Tech Sci

"Avtogen Delo" No 2, pp 28, 29

Briefly reviews attempts to establish clear concept of weldability." Concludes term is useless since it has no abs meaning, and meaning varies as welding technique advances. Study of tendency of steel to crack formation under definite conditions at given level of welding technique is

212T23

more important. States that there are no nonweldable metals or alloys, but certain processes of welding and heat treatment are as yet insufficiently developed to attain proper quality of welded joints and structures.

212T23

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

BC

B-I-6

Hot-working of chromium-manganese, chromium-manganese-nickel, and chromium-nickel stainless steels. J. S. Gintsburg, N. A. Alexandrova, and L. S. Gelderman (Rep. Inst. Met., Leningrad, 1933, No. 15, 59—69).—Pure austenite was found in a Cr–Mn steel with 8% Cu. The ferrite diminishes with increase of Mn and C. Ni has a greater effect than has Mn on increase of austenite. Cr–Ni steels with C 0·16—0·31, Si 0·38—0·77, Mn 0·40—0·88, Cr 17·91—19·60, and Ni 7·85—10·22% have a pure austenite structure. Ch. Abs. (e)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

B-I-5

Production of magnetic chromium steel. J. S. Gurevich. (Rep. Chair. Inst. Met., Leningrad, 1934, No. 18, 77—81).—Magnetic properties of the forged hot-rolled steel (C 0·97, Si 0·35, Mn 0·36, S 0·01, P 0·024, Cr 1·37, Ni 0·30%) were higher than after hot-rolling without forging. Ch. Abs. (c)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

PROCESSES AND PROPERTIES INDEX

High-speed tool steel for hack saws. Ya. S. Ginzburg, L. S. Gel'derman and A. N. Zhuravkin. *Repts. Central Inst. Metals* (Leningrad) No. 10, 134-40 (in English 140)(1936).—An exptl. investigation of the problems of heat treatment, rolling and annealing of steel used in the manuf. of hack saws. S. L. Madorsky

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9

Ca

9

The manufacture of stainless bimetal. Ya. S. Ginzburg, L. S. Gel'dersman and A. D. Gol'dberg. *Repts. Central Inst. Metals* (Leningrad) No. 17, 158-64(in German 164)(1934).—A discussion is given of methods of making 2-layer metal plates, where one layer is resistant to corrosion. The problem has not yet been completely solved and that exptl. work should be carried out in making bimetal as well as trimetal plates.

S. L. Madorsky

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B-I-6

BC

Production of nichrome wire. J. S. Ginzburg and A. D. Gnatenko (Rep. Inst. Met., Leningrad, 1936, No. 15, 70—76).—The alloy (Cr 16·67, Ni 59·17, Si 0·30, Mn 1·94, C 0·06, P 0·006, S 0·004%) should be prepared in a crucible furnace rather than in an induction furnace, as in the latter the grain boundaries of the product are not free from slag and impurities. Before rolling into bars the ingots should be forged (12%)—1220°). Grinding of the ingots before forging and of the bars before rolling is essential. Rolling to 45 × 45 mm. size should start at 1150°. Further reduction should be by cold-rolling. (Cu. Abs. (e)

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PROCESSES AND PROPERTIES INDEX

Investigation of spreading of alloy steels during rolling Cast alloys. Ya. S. Gintsburg and I. S. Gel'derman. *Repts. Central Inst. Metals, Leningrad* No. 10, 52-62 (1936). The pearlite steels tested are widely used in automobile, tractor and turbine work. In all cases, spreading increased with a drop in rolling temp. The differences in spreading between the various steels decrease as the temp. rises. The addn. of C, Ni and Cr-Ni to C, Ni and Cr-Ni steels, resp., causes an increase in spreading. Cr acts more effectively than Ni in spreading of Cr-Ni steels.

B. Z. Kamich

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B-1-4

[illegible] chromium-silicon steels [illegible] [illegible] were studied [illegible] tempered, and rolled conditions. Ch. Abs. (e)

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

PROCESSES AND PROPERTIES INDEX

The production of rustproof bimetal. Ya. S. Gensburg, M. B. Katsenelenbogen and V. S. Lur'e. *Kachestvennaya Stal* **1935**, No. 8, 27-31; *Chem. Zentr.* **1936**, I, 4450.—The production of rust-resistant bimetal by a method developed at the "Sichel and Hammer" foundry of Moscow is described. Two plates of rustproof steel, firmly pressed together and sepd. by an insulating material (MgO and graphite, 10:1), are to cast surrounded by a soft metal (as Armco Fe or low C steel) in a chill mold. Half of the ingot so prepd. is then rolled to form a bimetal sheet. M. G. Moore

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

PROCESSES AND PROPERTIES INDEX

The thermomechanical working of white cast iron. Ya. S. Gintsburg and S. I. Krasnitskii. *Sovet. Met.* 8, No. [illegible] 66-73(1936); *Chem. Zentr.* 1937, I, [illegible].—Forging studies are reported on white cast iron of varying compn. The specimens contained 1.5-[illegible]% Cr and [illegible]% C. The forging began at about 1050° and ended at about [illegible]. With careful working and control of temp., ingots can be forged without the appearance of internal or external cracks. To det. the best heat treatment for lathe tools of wrought white cast iron with [illegible]% Cr the specimens were quenched in water or oil from 760-1100° and annealed at [illegible]. Structure and Rockwell hardness were detd. The best results (hardness and cutting edge) were obtained by quenching in oil from [illegible]. M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

GINTSBURG, Y[illegible]

The thermal and mechanical finishing of highly alloyed steel and alloys Leningrad, Gl. v. red. lit-ry po chernoi metallurgii, 1937. (Mic 53-196)
Collation of the original as determined from the film: 379 p.

Microfilm TS-3

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9"

Chromium-manganese-copper steels. Ya. Agutaluna [illegible]. *Kachestvennaya Stal* 5, No. 1, 32-5(1937) (in Russian). *Met. Abstracts* (in *Metals & Alloys*) 8, 7[illegible] Twelve heats comg. C 0.15-0.30, Si 0.18-0.32, Mn 0.30-1.15, Cr 0.[illegible], Cu 0.34-0.91, P 0.011-0.025% are described. Best results were obtained with a heat with C 0.1[illegible], Si 0.[illegible], Mn 0.[illegible], S 0.014, P 0.025, Cr 0.45, Ni 0.16, Cu 0.55% producing (in hot rolled plates) 50,000 lb./sq. in. yield point, [illegible] lb./sq. in. tensile strength, 20% elongation and [illegible] kg./sq. cm. impact strength. M. W. R.

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP80-00513R000515120008-9

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12

The Production of Rolled Alloy Steel in Russia at the Twentieth Anniversary of the Revolution. Yu. S. Gintsburg. (Kachestvennaya Stal, 1937, No. 11, pp. 20–26). (In Russian). The author reviews the development of the rolling of alloy steels in Russia. Stages in the development of alloy steels and rolling-mill design are described and special developments such as the production of Nichrome, iron-chromium aluminium alloys, transformer steel and high speed steel, as well as work on ingotless rolling, are mentioned.

A.S.M. U.S.A. METALLURGICAL LITERATURE CLASSIFICATION

18

The Influence of the Austenite Grain Size on the Mechanical Properties of Medium-Carbon Structural Steel. Ya. S. Gintsburg and Ya. B. Shtuchkov. (Kachestvennaya Stal, 1938, No. 2, pp. 23–25) (In Russian). Statistical methods were applied to the study of 122 heats of steel containing carbon 0·30–0·35%, manganese 0·5–0·7%, silicon 0·2–0·3%, sulphur and phosphorus each <0·04%, chromium ≤0·2% and nickel ≤0·5% with McQuaid-Ehn grain size numbers of 1 to 5. The specimens were taken from rolled sheets and, after normalising and tempering, their tensile properties, impact strength and hardness were determined. The results are presented in the form of curves showing the relationships between the grain size and the above mechanical properties.

A.I.M. (U.S.A.) METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9

PROCESSES AND PROPERTIES INDEX

9

Manganese steel as a material for boiler construction
Ya. S. Ginzburg, E. A. Polzelenko and M. S. Frendel. *Kachestvennaya Stal* 6, No. 2, 9-14 (1938); *Chem. Zentr.* 1939, I, 1031.—The mech. properties at normal and elevated temps., the tendency to age, the resistance to creep stress and the brittleness when hot were detd. for Mn steels contg. C 0.23-0.28, Mn 1.3-1.5 and Si 0.25-0.35%. As regards the mech. properties at normal and elevated temps. Mn steel was shown to be a satisfactory steel for boiler construction. While the sensitivity to aging was less than that shown by pure C steels, it was greater than that of age-resistant Al boiler steels, such as Izett steel and Cuprizett steel. It is hoped that by proper methods of smelting the resistance of Mn steels to aging can be improved.

M. G. Moore

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9

Influence of the grain size of austenite on the mechanical properties of medium-carbon structural steel. Ya. S. Ginzburg and Ya. B. Shtuchkov. *Avtomobil'naya Stal* 6, No. 2, 23-8(1938); *Chimie & industrie* 40, 681. The investigation was carried out on steels contg. 0.30-0.55% C. The tensile strength of the tempered and annealed steel decreases with the grain size, no definite relation, however, could be established between the (conventional) limit of flow (corresponding to 0.2% elongation) and the grain size of the austenite. Longitudinal and transverse resistance to shock, and transverse elongation and contraction also increase with decrease in grain size. The results obtained on 10 rolled steels were more irregular on account of the lack of homogeneity of the properties of these steels. A. P.-C.

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9

24

7

Iron alloy of high electric resistance Ya. S. Gintsburg
Russ. 57,406, June 30, 1940. The alloy contains (%) C, up to 30%; Ni, 2.5%; Cr, 1.4%; Mn and [illegible]

ASM SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R000515120008-9

PROCESSES AND PROPERTIES INDEX

ca

Tendency of manganese steel ship plates to crack during welding. Ya. S. Gintsburg and Z. B. Dreizenshtok. *Avtogennoe Delo* 1940, No. 8-9, 12-14.—Most cracks were observed when seam direction was parallel to direction of steel rolling. Normalization decreased but did not eliminate the cracks completely. The tendency to crack increased with decreasing thickness of the welded plate. Mn steel contg. over 0.2% C and less than 8 mm. thick should not be used for welding T-joints with electrodes with chalk coatings. B. Z. Kamich

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

USSR/Electricity Aug 1947
Thermostat Controls
Heating, Electric

"Portable TSKTI Dilatometric Temperature Regulator," Ya. S. Gintsburg, Engr, 1 p

"Kotloturbostroyeniye" No 4

Diagram and explanation of a device for maintaining constant temperature in electrically heated laboratory and industrial ovens.

24T12

USSR/Metals Jan/Feb 48

Steel, Chromium Molybdenum
Columbium

"The Effect of Niobium on the Lasting Solidity of Chrome Molybdenum Steel at 550°," Ya. S. Ginzburg, Cand Tech Sci; A. V. Stanyukovich; K. A. Lanskaya, Engr, Cen Sci Res Turboboiler Inst imeni I. I. Polzunov, 2½ pp

"Kotloturbostroy" No 1 pp 17-19

Studies effect of niobium on its resistance to prolonged tension of a series of molybdenum-chrome steels containing 2-7% Cr and 0.5% Mo. Gives data

1/49T71

USSR/Metals (Cont'd) Jan/Feb 48

on stability of chrome-molybdenum-niobium steels at 500°.

1/49T71

USSR/Metals Jul 49

Creep
Test Techniques

"Machine for Testing Metals for Creep," Ya. S. Gintsburg, N. D. Zaytsev, Sci Res Boiler Turbine Inst, 4 pp

"Zavod Lab" No 7

Describes new testing machine which has certain advantages over previous models. Maximum tensile capacity is 750 kg. Used 5-mm samples (37-38 kg/sq mm) which makes it suitable for any type of heat-stable alloys. Sketches show

62/49185

USSR/Metals (Contd) Jul 49

leading system, electric-power supply for furnace, and mechanical recording of deformation. Includes photograph of machine and graphs of typical operation.

62/49185

USSR/Engineering - Combustion Chambers Feb 50
Turbines, Gas

"Problem of Wall Stress and Flame Tube Metal Behavior in Gas Turbine Combustion Chambers Under Operational Conditions," Ya. S. Gintsburg, 3 pp

"Energet Byul" No 2

Kurochkin examined particular case when determining heat stresses in flame tubes /See PA 152T247. As a result, he concluded these stresses were less severe than they actually are. Gintsburg discusses factors affecting these stresses and deduces requirements for alloy of which flame tube is made.

161T50

8520* Weldability and the Tendency Toward Formation of Cracks During Welding. (In Russian.) Ia. S. Gintsburg
Avtogennoe Delo, v. 23, Feb 1952, p. 28-29
A general discussion.