ZUBAREV, V.I.

Ways to improve the performance of basic metallurgic equipment
in copper smelting plants. TSvet. met. 29 no.7:18-21 Jl '56.
(MLRA 9:10)

1. Ministerstvo tsvetnoy metallurgii Kazakhskoy SSR.
          (Copper industry--Equipment and supplies)

ZUBAREV, V.M.

20-3-54/59

AUTHOR: Zubarev, V. M.

TITLE: On the Problems of the Relations Existing between the Oak and the Spruce (K voprosu o vzaimootnoshenii duba i yeli).

PERIODICAL: Doklady Akademii Nauk, 1957, Vol. 115, Nr 3, pp. 616-618 (USSR).

ABSTRACT: This problem has a long history in the places where the distribution areas of these two species of trees meet. Since a long time the majority of vegetable geographers and forest experts consider the displacement of the oak by the spruce as one of the main reasons for the shift of the northern boundary of the oak distribution towards the south. There are, however, also other opinions. The author exploits the material obtained by the study of the factors, which determine the northern distribution boundary of the Quercus pedunculata. of today. There are scarcely any references or data concerning the relations existing between the two tree species at the northernmost boundaries of the oak areal. It is known that the spruce settles here easily in the oak woods. The oak offers, however, strong resistance to the penetration, the roots of the spruce seedlings dry out at the thick layer of leaves covering the ground, whereas the small quantity of rooted spruces is stifled under further thick layers of falling leaves. The spruce can take roots only at micro-elevations. The inve-

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On the Problems of the Relations Existing between the Oak   2D-3-54/59
and the Spruce.

what regards growth. The annual growth of the oak was in the mentioned
Piceto-Quersetum aegopodiosum much lower than usually what regards
volume and diameter. Spruces settling in an oak wood aged 3o years
excede in their 36th year of life the oaks what concerns growth. Thus
the spruce does not only hinder the oak reproduction but also weakens
the life activity of the grown up oak.
There are 2 figures and 11 Slavic references.

ASSOCIATION: Forest Institute of the AN of the USSR (Institut lesa Akademii nauk
SSSR).

PRESENTED: By V. N. Sukachev, Academician, February 9, 1957

SUBMITTED: February 7, 1957.

AVAILABLE: Library of Congress.

Card 3/3

ZUBAREV, V. M.

"Biological Reasons for the Possibility of Transplanting Oil-Trees to the Northern Districts of the European Part of the USSR

dissertation defended for the degree of a Candidate of Biological Sciences at the Inst. of Forestry.
Dissertations. Branch of Biological Sciences Jul-Dec 1957.
Vest. Ak Nauk SSSR, No. 4, 1958, pp. 119-120

COUNTRY   USSR
CATEGORY   Forestry, Dendrology.

ABS. JOUR   Ref Zhur-Biologiya, No.1, 1959, No. 1444

AUTHOR   Tuberev, V.M.
INST.   Forestry Inst. AS USSR
TITLE   English Oak in the Northern Limits of its
                 Distribution.

ORIG. PUB.   Soobshch. In-ta lesa. AN SSSR, 1958,
                 vyp. 7, 24-32

ABSTRACT   A study was made of oak groves in the flood
                 plains of the Kama and Vyatka rivers near the
                 city of Kotel'nich and Sorvizhi Landing,
                 and also of mountain oak groves   Tungaro-
                 Krasnoufimsk forest-steppe island in the
                 Krasnoufimsk Leshoz in Sverdlovskaya Oblast.
                 The plantations of oak in the inundated part
                 of the Vyatka and Kama flood plains are chara-
                 cterized by pure composition; in the non-inun-
                 dated part pine and fir are mixed in the oak.

CARD: 1/2

CATEGORY

ABS. JOUR.

REF ZHUR - BIOLOGIYA. NO.1, 1959 ;

AUTHOR   :

INST.   .   NO.1444

TITLE

ORIG. PUB. :

ABSTRACT   oak distribution.. Soil fertility and   tem-
                perature determine the insular habitations of
                oak to the north of its area. Examples are
                cited of successful experiments in the growing
                of oak beyond the limits of the modern northern
                boundary of its spread. It is considered pos-
                sible to create commercially valuable stands of
                oak timber in places where felled oak forests
                were replaced by softwood   species.

                                            -- V.I.Klimov

CARD: 3/3

ZUBAREV, V. N.

Zubarev, V. N. — "Experimental Investigation of the P, v, t Relation of Water and Water Vapor at Superhigh Pressures." Min Higher Education USSR, Moscow Order of Lenin Power Engineering Inst imeni V. M. Molotov, Moscow, 1955 (Dissertation for Degree of Candidate of Technical Sciences).

SO: Knizhnaya Letopis', No. 23, Moscow, June, 1955, pp. 87-104.

ZUBAREV, V. N.

AID P - 3883

Subject   : USSR/Power Eng.

Card 1/1   Pub. 110-a - 4/17

Authors   : Kirillin, V. A., Corr. Memb., Academy of Sci., USSR
               and Zubarev, V. N., Kand. Tech. Sci., Moscow Power
               Institute

Title   : Research on specific volume of water and steam at
               super high pressure .

Periodical : Teploenergetika, 11, 19-23, N 1955

Abstract   : The article describes methods of research done on water
               and steam volume at 950 atm pressure and 500°C temperature
               A table with enthalpy data computed following experiments
               is included. Two diagrams. Four Russian references,
               1950-1953, 2 English, 1931-1933.

AUTHOR: Vukalovich, M.P., Dr.Tech.Sci., Zubarev, V.N.,   SOV/96-58-7-6/22
            Cand.Tech.Sci. and Prusakov, P.G., Engineer.

TITLE: Experimental investigations on the enthalpy of steam
            (Eksperimental'noye issledovaniye ental'pii vodyanogo para.)

ABSTRACT: Although extensive work has been done in the USSR on the
            properties of steam, there has so far been no attempt to determine
            directly the enthalpy of steam. Enthalpy figures have been
            calculated either from experimental data for c_p, the specific heat
            at constant pressure, or from the specific volume. Both methods are
            theoretically sound but subject to error, for example in integration,
            and appreciable differences have been found between results obtained
            by the two methods. The method of determining the enthalpy of steam
            used in the present work is accurate. In analogous work carried out
            in England by Callender and Egerton, the enthalpy error was within
            0.1%. Havlicek and Miskovsky used the same method to determine the
            enthalpy of steam at pressures up to 400 kg/cm^2 with an accuracy of
            0.25%. The equipment used for the present work is illustrated
            diagrammatically in Fig.1., and is described in detail. Water is
            distilled, de-aerated and cooled; it is then pumped at the rate of
            14 litres per hour to a single-pass electric boiler. In the first
Card 1/4   stage of the boiler the temperature is raised to 200 – 250°C and

Experimental investigations on the enthalpy of steam.   SOV/96-58-7-6/22

in the second the required temperature is reached. The steam then
passes to a pressure-and temperature-measuring chamber, and thence
through two similar and separate throttling devices, in which the
pressure is reduced to approximately atmospheric. Finally the steam
passes to calorimeters. The rate of flow through one throttling
device and calorimeter is twice that through the other. Under these
conditions, by appropriate calculations, thermal losses beyond the
measuring chamber can be allowed for. The experimental procedure is
described and formulae used in the calculations are given. The heat
extracted from the steam in the calorimeters is measured directly.
A more detailed description of the construction of the apparatus is
then given, including information about the calibration of the
measuring equipment. The calorimeters used are illustrated in Fig.2.
and described. The accuracy of determinations depends mainly on the
accuracy of measurement of the temperature difference of the cooling
water, which is estimated at 0.04 - 0.05%. The accuracy of weighing
the condensate is about 0.01%. The tests were repeated several
times. Other tests established that the losses in the two throttling
and calorimeter installations were equal. The maximum error in
enthalpy determination is different for different regions of
measurement, but should not be greater than 1.5 kcal/kg. The
Card 2/4   experimental data obtained in the work are given in Tables 1 - 7.

Experimental investigations on the enthalpy of steam.   SOV/96-58-7-6/22

which range from 200 kg/cm^2, 470°C. to 400 kg/cm^2, 500°C. The tables show that the scatter of enthalpy values round the mean does not exceed ± 1.5 kcal/kg, the greatest scatter being obtained in one of the first tests at 200 kg/cm^2 and 470°C. Mean values of enthalpy of steam rounded off to even values of pressure and temperatures are given in Table.8, and are compated with other available data. Values obtained at pressures below 300 kg/cm^2 are also included. The new experimental data are in good agreement with those of Havicek and Miskovsky and with previous work of Vukalovich, but agreement with the tables of the All-Union Thermotechnical Institute is not so good. The next task before the authors is to make measurements at pressures up to 500 kg/cm^2 and temperatures up to 600°C; the

Card 3/4

Experimental investigations on the enthalpy of steam.   SOV/96-58-7-6/22

region not covered by previous work will be studied in most
detail, because it is here than divergencies in enthalpy tables are
greatest. When the work has been done it is hoped to correct the
steam tables accordingly. There are 2 figures, 8 tables and
6 literature references (5 Soviet and 1 German)

ASSOCIATION: Moskovskiy Energeticheskiy Institut (Moscow Power Institute)

1. Steam - Enthalpy   2. Enthalpy - Determination

Card 4/4

VORONIN, Grigoriy Ivanovich, prof. dokt.tekhn.nauk., VUKALOVICH, M.P., prof.
dokt.tekhn.nauk, retsenzent,; PETUKHOV, B.S.. prof., dokt.tekhn.nauk,
retsenzent,; ZUBAREV, V.N., dots.,kand.tekhn.nauk, retsenzent,; ISACHENKO,
V.P., dots.,kand.tekhn.nauk, retsenzent,; RASSKAZOV, D.S., inzh.,red.;
PETROVA, I.A., izd.red.; PUKHLIKOVA, N.A., tekhn.red.

[Principles of thermodynamics and heat transfer] Osnovy termodinamiki
i teploperedachi. Moskva, Gos. izd-vo obor., promyshl., 1958. 341 p.
(MIRA 11:9)

(Thermodynamics)
(Heat--Transmission)

ZUBAREV, Vladimir Nikolaevich; KLEBANOV, A.G., otvetstvennyy red.; SUROVA,
V.A., red. izd-va; NADBINSKAYA, A.A., tekhn. red.; HABITOV, A.,
tekhn. red.

[Accounting in contract building organizations of the coal industry]
Bukhgalterskii uchet v podriadnykh stroitel'nykh organizatsiiakh
ugol'noi promyshlennosti. Moskva, Ugletekhizdat, 1958. 157 p.
(MIRA 11:9)
(Coal mines and mining--Accounting)

VUKALOVICH, M.P., doktor tekhn.nauk; ZUBAREV, V.N., kand. tekhn.nauk;
PRUSAKOV, P.G., inzh.

Experimental study of the enthalpy of water vapor [with summary
in English]. Teploenergetika 5 no.7:22-28 Jl '58.   (MIRA 11:9)

1.Moskovskiy energeticheskiy institut.
          (Water vapor)

SOV/96-59-10-14/22

AUTHORS: Vukalovich, M.P. (Dr.Tech.Sci.); Zubarev, V.N. (Cand. Tech.Sci.); Aleksandrov, A.A. (Engineer) and Kalinin, Yu.Ya. (Engineer)

TITLE: An Experimental Determination of the Specific Volumes of Water up to Pressures of 1200 kg/cm²

ABSTRACT: Available information about the thermo-dynamic properties of water at high pressures is inadequate and experimental data on the specific volume of water were required. The data are needed both to formulate tables of specific volume, and also to calculate calorific values of the specific heat at constant pressure and of the enthalpy of water at high pressures. Similar work is in hand in the U.S.A. by Kennedy, Knight and Holser. The equipment used was very similar to that described by Kirillin in Teploenergetika Nr 11, 1935. The piezometer was made of steel 1Kh18N9T, whose thermal coefficient of expansion is tabulated. Precautions taken to ensure accuracy of the experiments are described in considerable detail. Specific volumes of water were determined at six temperatures, and the experimental data are tabulated.

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SOV/96-59-10-14/22

An Experimental Determination of the Specific Volumes of Water
up to Pressures of 1200 kg/cm^2

The maximum error of the test data calculated in the
usual way is 0.06-0.08%, the latter figure relating to
the maximum test temperature. The experimental data
obtained in this work are compared with published
American and Soviet data at each of the six temperatures.
Agreement between the present work and published American
work is good; such differences as there are lie within
the total experimental error of the two sets of data.
At low temperatures there is good agreement with the
published Soviet data, but differences become appreciable
at higher temperatures. This is evidently because values
of specific volume at high pressure previously published
were obtained by extrapolation of experimental data
obtained at a pressure of 300 kg/cm^2. The previously
published Soviet data of Vukalovich appear to be in need
of correction. There are 2 tables, 1 figure and 8 ref's,
(5 Soviet, 3 English).

Card
2/2

ASSOCIATION: Moscow Power Institute
               (Moskovskiy energeticheskiy institut)

SOV/96-60-1-14/22

24,5200

AUTHORS: Vukalovich, M. P., Doctor of Technical Sciences, and
Dzampov, B. V., and Zubarev, V. N., Candidates of
Technical Sciences

TITLE: Tables of the Thermal-physical Properties of Ammonia

ABSTRACT: Extensive use is now being made of ammonia as a heat-
transfer medium, but adequate tables of its thermal
physical properties are not available. Accordingly,
the authors decided to study, analyse and select the
most reliable experimental and calculated data on the
properties of ammonia and to work out the tables given
in this article. The tables of pressure, volume and
temperature cover the range of 40 - 290°C; those of
specific heat at constant pressure are for the range
40 - 280°C; and the viscosity tables cover from
30 - 250°C. The pressure range is 1 - 800 kg/cm^2 in
all cases. International published work on the properties
of ammonia is critically reviewed and the best is used
in formulation of the tables. Table 1 gives values of
the specific volume of ammonia for temperatures up to
290°C; available values for higher temperatures were not

Card 1/2

Tables of the Thermal-physical Properties of Ammonia

used because there is evidence of decomposition of ammonia
above 290°C. The values tabulated were obtained by
calculation and graphical methods. There is satisfactory
agreement with other authors and differences do not
exceed 0.2 - 0.3%. Work done on the specific heat at
constant pressure is reviewed. Values were calculated
or determined graphically and the results are plotted
in Fig 2. It was considered that the errors in this
table may be 2 - 3%, and on the 150°C isotherm at
pressures of 100 - 150 kg/cm² they may be somewhat greater.
The properties of ammonia on the saturation line have been
studied by several authors but the data remain inadequate;
the thermo-dynamic properties of ammonia on the saturation
line from temperatures of - 70 to + 132.4°C are given in
Table 3. Work on the viscosity of ammonia is reviewed
and values are given in Table 4. It is considered that
the values in this table are accurate and reliable up to
250°C and 800 kg/cm². There are 1 figure, 4 tables and
13 references, 4 of which are Soviet, 8 English and 1
German.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Power
Institute)

Card 2/2

VUKALOVICH, M.P., doktor tekhn.nauk; DZAMPOV, B.V., kand.tekhn.nauk;
ZUBAREV, V.N., kand.tekhn.nauk

Thermodynamic properties of a 96 percent (by volume) solution
of ethyl alcohol in water. Teploenergetika 7 no.2:70-77
                                        (MIRA 13:5)
F '60.

1. Moskovskiy energeticheskiy institut.
         (Ethyl alcohol--Thermal properties)

VUKALOVICH, M.P., doktor tekhn.nauk; ZUBAREV, V.N., kand.tekhn.nauk;
      DZAMPOV, B.V., kand.tekhn.nauk

     Calorific properties of the 96 per cent (by volume) ethyl
     alcohol water solution. Teploenergatika 7 no.10:63-67
     0 '60.   (MIRA 14:9)

     1. Moskovskiy energeticheskiy institut.
                  (Ethyl alcohol)

VUKALOVICH, M.P., doktor tekhn.nauk; ZUBAREV, V.N., kand.tekhn.nauk;
KALININ, Yu.Ya., inzh.; ALEKSANDROV, A.A., inzh.

Equation of state of water based on experimental data.
Teploenergetika 8 no.4:76-81 Ap '61.   (MIRA 14:8)

1. Moskovskiy energeticheskiy institut.
                  (Water—Thermal properties
                  (Equation of state)

ZUBAREV, V.N., kand.tekhn.nauk; MARKIN, V.A., inzh.

Id-diagram of moist air for pressures of 1 to 15 kg./cm.^{2}
Teploenergetika 8 no.7:50-53 Jl '61.   (MIRA 14:9)

1. Moskovskiy energiticheskiy institut.
   (Compressed air tables, calculations, etc.)

VUKALOVICH, M.P., doktor tekhn.nauk, prof.; ZUBAREV, V.N., kand.tekhn.nauk;
AIEKSANDROV, A.A., inzh.

Experimental determining of the specific volumes of steam at
temperatures from 700° to 900° C and under a pressure up to
1200 Kilogram per square centimeter. Teploenergetika 9
no.1:49-51 Ja '62.   (MIRA 14:12)

1. Moskovskiy energeticheskiy institut.
                        (Steam)

VUKALOVICH, M.P., doktor tekhn.nauk, prof.; ZUBAREV, V.N., kand.tekhn.nauk;
PRUSAKOV, P.G., inzh.

Experimental study of the enthalpy of water vapor. Teploenergetika
9 no.3:56-63 Mr '62.   (MIRA 15:2)

1. Moskovskiy energeticheskiy institut.
                          (Steam--Thermal properties)

S/096/62/000/008/004/004
E194/E455

Calculation of the thermodynamic ...

reviewed: heat of dissociation, saturated vapour pressure,
equilibrium concentrations and properties of reacting mixture.
The available results are used to calculate the values given in
Table 2.   These values apply on the saturation line.   The
results obtained are compared with those of other authors and are
discussed.   An enthalpy/entropy diagram for potassium is plotted.
The likely errors in the results are assessed and are mostly of
the order of a few percent.   There is need for more accurate
experimental knowledge of the heat of dissociation of the
molecule K_2 and of other properties.   The calculations are
valid provided that thermodynamic equilibrium is set up in the
mixture, but the extent to which this equilibrium is in fact
observed, for example during supersonic flow of vapour, requires
special consideration.   In addition to the work described in this
article, tables have been drawn up and diagrams of state constructed
for superheated potassium vapour at temperatures up to $1300°C$,
including the specific heats at the speed of sound;   and a more
complete table of the properties of the saturated vapour has been
drawn up.   There are 3 figures and 2 tables.
Card 2/# 3

41391

S/096/62/000/010/001/001
E202/E435

AUTHORS: Vukalovich, M.P., Doctor of Technical Sciences, Professor,
             Zubarev, V.N., Candidate of Technical Sciences,
             Fokin, L.R., Engineer

TITLE: Calculation of thermodynamic properties of potassium
             at temperatures up to 1300°C and pressures up to
             25 kg/cm2

PERIODICAL: Teploenergetika, no.10, 1962, 65-72

TEXT: Gases dissociating at high temperatures according to
$X_2 \rightleftarrows 2X$ are treated as reacting, ideal mono- and bi-atomic
components of equilibrium mixtures.   A table is compiled for
partial derivatives of first order for pressure P, temperature T,
degree of dissociation α, specific volume v, entropy s,
enthalpy i and internal energy u.   This table, compiled on the
basis of published work, can also be used for the calculation of
α_T - coeff. of heat expansion and isothermal and adiabatic
compressibility β_T and β_s respectively.   A detailed
discussion of a number of thermodynamic properties in the
regions of partly condensed vapour and along the saturation curve

Card 1/4

Calculation of thermodynamic ...

S/096/62/000/010/001/001
E202/E435

is given; it includes the differential Joule-Thomson effect
α_{JT} for superheated vapour and by referring p, α, c_p to
saturation curve it is possible to calculate the JT effect on
the saturation curve, from the side of the single phase region.
The Clausius-Clapeyron equation is used for the evaluation within
the condensing vapour region.   Detailed attention is given to the
application of sound velocity in the analyses of flow processes in
vapours.   In the calculation of the former, it is assumed that
the vapours comprise a hydrodynamically homogeneous medium of
reacting ideal gases, their degree of dryness x, being
sufficiently high to disregard the volume and compressibility of
the liquid phase.   The sound velocity is calculated from the
Laplace equation, assuming infinitely small adiabatic
perturbation propagated in the non-viscous and non (heat)
conducting medium.   Further assumptions are used in calculating
the "thermodynamic" velocity of sound in superheated and
saturated vapours on the side of the single phase region of the
dissociating vapours.   In actual calculations a concept of
"sonic adiabatic indicator" was introduced, defined as
Card 2/4

Calculation of thermodynamic ...

$k_s = -\frac{v}{p}(\frac{\partial p}{\partial v})_s$, which in the case of dissociating gas was expressed as: $k_s = \frac{c_p}{c_v(1 + \mathcal{E})}$, where $\mathcal{E} = \frac{\alpha}{2}(1 - \alpha)$.

The considerably more complex flow processes of the partly condensed vapour are also considered using largely formulae and conditions stipulated by I.I.Novikov and Yu.S.Trelin (Prikladnaya mekhanika i tekhnicheskaya fiziki, no.2, 1960). The latter are also used to compile a table of thermodynamic properties of potassium vapours from 500 to 1300°C, taking heat of dissociation $D_o^o(K_2)$ = 11842 + 1000 kcal/mol and taking the values of saturation pressure by extrapolating the equilibrium vapour to liquid from 800 to 1300°C from the experimental enthalpy data of liquid potassium. The table of saturated potassium vapour lists: heat contents c_{sat}'', c_p'' sing.ph., c_v'' sing.ph. and c_v'' two ph.; differential JT effect α_{JT}'' sing.ph. and α_{JT}'' two ph. and the above k_s as k_s'' sing.ph. and k_s'' two ph. and also sound velocities a'' sing.ph. and α'' two ph.. Yet another table lists the

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Calculation of thermodynamic ...   S/096/62/000/010/001/001
                                                E202/E435

following properties of superheated potassium vapours: α,
specific volumes, i and s .   Additional three diagrams give
the results of calculations on the side of the superheated vapour
viz. c_p vs t°C; k_s vs t°C and a vs s, the last including the
region of condensing vapour up to 0.6.   Brief general conclusions
and error analysis are included.   There are 3 figures and 3 tables.

ASSOCIATION: Moskovskiy energeticheskiy institut
             (Moscow Power Engineering Institute)

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11. 8300
11. 3130

S/020/62/142/002/010/029
B104/B138

AUTHORS: Zubarev, V. N., and Telegin, G. S.

TITLE: Shock compressibility of liquid nitrogen and dry ice

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 2, 1962, 309-312

TEXT: The substances resulting from the detonation of condensed explosives were examined at pressures of several hundreds of thousands of atmospheres. Pressures of up to ~ 0.5 million atmospheres were produced in CO_2 and N_2 by slowing down plates moving at high speeds. The characteristics of the shock waves in N_2 and CO_2 were determined from the shock waves in the Cu and Al shields enclosing the substances to be examined (Table 1). In determining the pressure and the mass velocity from the wave velocities, the isentropy of expansion of the shield material was assumed to coincide with the mirror image of the adiabatic shock curves of the latter. The resulting error lies within measuring accuracy. The adiabatic shock curves of N_2 and CO_2 (Table 3) were calculated on the basis of the theory of J. E. Lennard-Jones and A. F. Devonshire (Proc. Roy. Soc., 163A, 53 (1937)) and Card 1/4

Shock compressibility of ...

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S/020/62/142/002/010/029
B104/B138

calculations of R. H. Wentorf, R. J. Buchler et al. (J. Chem. Phys., 18, 1484 (1950)). The pressure produced by the thermal motion of molecules during the explosion, is about 40% of the total pressure. The thermal motion of molecules is of importance when considering the equation of state of explosion products. L. V. Al'tshuler is thanked for advice and assistance, N. V. Panov, N. M. Filipohuk, and I. A. Dolgov for participating in the experiments, and Yu. M. Shustov and Ye. V. Mokhova for calculations. There are 2 figures, 3 tables, and 11 references: 4 Soviet and 7 non-Soviet. The four most recent references to English-language publications read as follows: J. M. Walsh, M. H. Rice, J. Chem. Phys., 26, 815 (1957); J. Dapoigny, J. Kieffer, B. Vodar, J. Phys. Rad., 17, 606 (1956); F. C. Gibson, M. Bowser et al., J. Appl. Phys., 29, 628 (1958); R. H. Wentorf, R. J. Buchler et al., J. Chem. Phys., 18, 1484 (1950).

PRESENTED: August 10, 1961, by Ya. B. Zel'dovich, Academician

SUBMITTED: June 22, 1961

Card 2/4

ZUBAREV, V.N.; TELEGIN, G.S.

Calculation of the parameters of detonation waves from condensed explosives. Dokl. AN SSSR 147 no.5:1122-1125 D '62.

(MIRA 16:2)

1. Predstavleno akademikom Ya.B. Zel'dovichem.
                (Detonation)   (Explosives)

S/181/63/005/003/028/046
B102/B180

AUTHORS: Vashchenko, V. Ya., and Zubarev, V. N.

TITLE: On the Grüneisen coefficient

PERIODICAL: Fizika tverdogo tela, v. 5, no. 3, 1963, 886-890

TEXT: The Grüneisen coefficient (ratio between thermal pressure and thermal energy density) is usually calculated by one of the following formulas

$$\gamma_s = -\frac{2}{3} - \frac{V}{2}\frac{\frac{d^2}{dV^2}P_s}{\frac{d}{dV}P_s},$$ (Slater)

$$\gamma_{D_M} = -\frac{1}{3} - \frac{V}{2}\frac{\frac{d^2}{dV^2}(P_s V^{2/3})}{\frac{d}{dV}(P_s V^{2/3})}.$$ (Dugdale-McDonald)

Card 1/5

On the Grüneisen coefficient

$$\gamma_l = -\frac{V}{2}\frac{\frac{d^2}{dV^2}(P_x V^{1/3})}{\frac{d}{dV}(P_x V^{1/3})}.$$

(theory of the free volume)

The accuracy of the assumptions made on the derivation of these relations is discussed. The weak dependence of Poisson's ratio μ on the volume, in particular, has a considerable effect on Slater's result. Due to the difference in longitudinal and transverse frequencies in the Debye spectrum

$$\gamma_t = -\frac{d\ln\omega_t}{d\ln V} \quad \text{и} \quad \gamma_l = -\frac{d\ln\omega_l}{d\ln V}, \tag{4}$$

$$\omega_l \sim \frac{c_l^2}{V^{1/3}} \sim V^{1/3}\frac{1-\mu}{1+\mu}\frac{dP_x}{dV}; \quad \omega_t \sim \frac{c_t^2}{V^{1/3}} \sim V^{1/3}\frac{1-2\mu}{1+\mu}\frac{dP_x}{dV}. \tag{5}$$

one obtains

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On the Grüneisen coefficient

$$\left.\begin{array}{l} \gamma_l = -\dfrac{4-3n}{6} - \dfrac{V}{2}\dfrac{\dfrac{d^2}{dV^2}(P_x V^n)}{\dfrac{d}{dV}(P_x V^n)}, \\[3mm] \gamma_l = -\dfrac{4-3m}{6} - \dfrac{V}{2}\dfrac{\dfrac{d^2}{dV^2}(P_x V^m)}{\dfrac{d}{dV}(P_x V^m)}, \end{array}\right\} \quad m = \dfrac{3}{2}\dfrac{1-\mu_0}{1-2\mu_0}\,n. \tag{8}$$

where μ_0 is the μ value at $P_x = 0$. $/$ for $P_x = 0$ is then given by

$$^0 = {}^0_S - \frac{n}{6}\frac{4-5\mu_0}{1-2\mu_0} ,$$

$/^0_S$ being the $/$ value at $P_x = 0$. $\mu(V)$ may be determined

from $/^0_S$ and $/_{exp}$: When $/_{exp} < {}^0_S$, μ increases on compression $(n > 0)$ when $/_{exp} / {}^0_S$, μ decreases $(n < 0)$. Up to now only three metals, Pt, Pb and Au, are known for which $/_{exp} > / {}^{\ }_S$. The $/_{DM}$ formula was obtained from the

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On the Grüneisen coefficient

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oscillator model and is neither experimentally nor theoretically proven. Its occasional better agreement with experimental data is accidental. In the theory of the free volume

$$\gamma_f = \frac{\left(\frac{\partial \ln v_f}{\partial \ln V}\right)_T}{\frac{3}{2} + \left(\frac{\partial \ln v_f}{\partial \ln T}\right)_V},$$ (10)

with

$$v_f = \left\{\frac{2\pi kT}{\chi''(0)}\right\}^{\frac{3}{2}},$$ (12)

leads to

$$\gamma = -\frac{1}{2}\frac{d \ln \chi''(0)}{d \ln V}.$$ (14)

where.

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On the Grüneisen coefficient

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(13).

The latter relations agree with the initially given γ_f formula. For crystalline argon and KCl $\gamma(V)$ (γ as a function of the lattice constant d) is calculated according to Born's theory and compared with γ_S, γ_{DM}, γ_f; $\gamma_f(V)$ lies closest to the Born curve. For KCl the divergence increases with decreasing d, due to a phase transition. There are 2 figures.

SUBMITTED: June 4, 1962 (initially)
              October 25, 1962 (after revision)

Card 5/5

ZUBAREV, V. N., kand. tekhn. nauk; ALEKSANDROV, A. A., kand. tekhn. nauk

Heat transmission and viscosity of a 96-per cent (in volume) solution of ethyl alcohol in water. Teploenergetika 10 no.3: 74-78 Mr '63.   (MIRA 16:4)

1. Moskovskiy energeticheskiy institut.

        (Ethyl alcohol—Thermal properties)

VUKALOVICH, M.P., doktor tekhn. nauk, prof.; ZUBAREV, V.N., kand. tekhn. nauk; PRUSAKOV, P.G., inzh.

Experimental study of the enthalpy of steam. Teploenergetika 10 no.10:63-69 O'63   (MIRA 17:7)

1. Moskovskiy energeticheskiy institut.

ZUBAREV, Vladimir Nikolayevich; ALEKSANDROV, Aleksey Aleksandrovich;
     MELEYEV, A.S., red.; VUKALOVICH, M.P., red.

     [Practical work in engineering thermodynamics] Praktikum po
     tekhnicheskoi termodinamike. Moskva, Energiia, 1965. 296 p.
                                                    (MIRA 18:5)

VUKALOVICH, M.P., doktor tekhn.nauk, prof.; ZUBAREV, V.N., kand.tekhn.nauk; PRUSAKOV, P.G., kand.tekhn.nauk; ALEKSANDROV, A.A., kand.tekhn.nauk

The is-diagram of steam at 800-1500°C temperatures and pressures up to 1000 bar. Teploenergetika 12 no.10:88-89 O '65.

(MIRA 18:10)

1. Moskovskiy energeticheskiy institut.

ZUBAREV, V.V. (Simferopol')

Quantitative analysis of the initial plethysmogram and vas-
cular reflexes to light stimuli. Vrach. delo no.11:49-51
N'63   (MIRA 16:12)

1. Kafedra gospital'noy terapii (ispolnyayushchiy obyazan-
nosti zaveduyushchego - V.P.Pomerantsev) pediatricheskogo
fakul'teta Krymskogo meditsinskogo Instituta.

ZUBAREV, V.V.

Transportation of rails. Put' i put. khoz. 9 no.7:11 '65.
(MIRA 18:4)

1. Rukovoditel' laboratorii Ural'skogo otdeleniya Vsesoyuznogo
nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta
Ministerstva putey soobshcheniya (Sverdlovsk).

ZHBARIN, V.V., Inzh.

Studying the stability of long weight freight trains to longitudinal displacements. Vest. TSNII ...

1. Ural'skoye otdeleniye Vses. nauchno-issledovatel'skogo Instituta zheleznodorozhnogo transporta, ... Sukhanov, Sverdlovsk.

SVANIDZE, G.G.; REZNIKOVSKIY, A.Sh.; ZUBAREV, V.V.

Graphs for designing impounding reservoirs for flow regulation
over a period of years. Trudy Inst. energ. AN Gruz. SSR 17:
287-296 '63.   (MIRA 17:7)

SVANIDZE, G.G.; RETHIKOVSKIY, A. Sh.; ZUBAREV, V.V.

Curves $F(i_v, i_a, \beta, \rho) = 0$ for calculating the several-year capacity of a water reservoir. Soob. AN Gruz. SSR 34 no.3:
621-628 Je '64

(MIRA 18:1)

1. Gruzinskiy nauchno-issledovatel'skiy institut energetiki imeni A.I. Didebulidze, Tbilisi. Submitted March 12, 1964.

ZUBAREV, V.V.

Additional equipment for ATsZhO-4-164 tank trucks. Gaz.prom. 6 no.7:
25-26 '61.   (MIRA 17:2)

OBREZKOV, V.I., kand.tekhn.nauk; MALININ, N.K., inzh.; MATVIYENKO, N.I.,
student; ZUBAREV, V.V., student

Determination of the optimum operation of a hydroelectric power
station with seasonal regulation using analog computers. Trudy
MEI no.46:13-24 '63.   (MIRA 18:3)

1. Kafedra gidroenergetiki Moskovskogo ordena Lenina energeti-
cheskogo instituta.

AZNAUR'YAN, M.S., mayor meditsinskoy sluzhby; ZUBAREV, V.V., kapitan
        meditsinskoy sluzhby

Electrocardioscopy in dispensary and ambulatory examinations. Voen.-
med. zhur. no.7:72-73 Jl '61.
                (ELECTROCARDIOGRAPHY)   (MIRA 15:1)

DRUGAL', Sergey Aleksandrovich; ZUBAREV, Viktor Vasil'yevich;
KOGAN, L.A., kand. tekhn.nauk, retsenzent; MARTYNOV, M.S.,
inzh., retsenzent; FEDORCHUK, V.A., kand. tekhn. nauk,
retsenzent; FILIPPOVA, L.S., red.; SHISHLYKOV, Ye.S., inzh.,
red.; USENKO, L.A., tekhn. red.

[Experience in the mechanization of the servicing of
refrigerator cars] Opyt mekhanizatsii ekipirovki vagonov-
lednikov. Moskva, Transzheldorizdat, 1963. 31 p.
                                                    (MIRA 16:5)
            (Refrigerator cars)
      (Railroads--Equipment and supplies)

ANDRIANOVA, Tamara Nikolayevna; DZAMPOV, Boris Vasil'yevich;
        ZUBAREV, Vladimir Nikolayevich; REMIZOV, Serafim
        Aleksandrovich; VUKALOVICH, M.P., prof., red.;
        SINEL'NIKOVA, L.N., red.; BUL'DYAYEV, N.A., tekhn. red.

        [Problems in industrial thermodynamics] Sbornik zadach po
        tekhnicheskoi termodinamike. [By] T.N.Andrianova i dr.
        Moskva, Izd-vo "Energiia," 1964. 199 p.   (MIRA 17:3)

ZUBAREV, V.V., inzh.

Stability of long length cargo in transportation on coupled
flat cars. Vest. TSNII MPS 24 no.8:46-49 '65.

(MIRA 19:1)

ZUBAREV, V.Ya., inzhener.

Apparatus for determining oxygen content in feed water.   Elek.sta. 25
no.5:53-54 My '54.   (MLRA 7:6)
        (Feed water)

LYSENKO, F.I., polkovnik; ADENIN, A.S., polkovnik; BONDARENKO, V.Ye.,
polkovnik; ROGACHEV, F.B., polkovnik; RYB'YAKOV, M.M., pod-
polkovnik; BELYAKOV, S.A., polkovnik; ISAKOV, P.F., polkovnik;
BURLYAY, A.A., polkovnik; SAVCHENKO, A.M., polkovnik; IVANOV,
N.I., polkovnik; AVDEYENKOV, I.P., polkovnik; ZUBAREV, Ya.G.,
polkovnik; DIBROVA, I.Z., kapitan 1 ranga; TSVETKOV, R.V.,
general-mayor, red.; BRITVIN, N.I., polkovnik, red.; SHARPILO,
P.N., podpolkovnik, red.; MYASNIKOVA, T.F., tekhn.red.

[Party political work in the Soviet Army and the Navy] Partiino-
politicheskaia rabota v Sovetskoi Armii i Voenno-Morskom Flote.
Moskva, Voenizd-vo M-va obor.SSSR, 1960.   284 p.

(MIRA 13:6)

1. Voyenno-politicheskaya akademiya imeni V.I.Lenina (for all,
except TSvetkov, Britvin, Sharpilo, Myasnikova).
    (Russia--Armed forces--Education, Non-military)

L 42170-66   EWT(1)

ACC NR: AR6013878   SOURCE CODE: UR/0274/65/000/011/B044/B044

AUTHORS: Lyakhovkin, A. A.; Mikhaylov, A. V.; Zubarev, Yu. I.

TITLE: Phase stability of harmonic oscillators

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. 11B331

REF SOURCE: Tr. uchbn. in-tov svyazi. M-vo svyazi SSSR, vyp. 23, 1964, 18-29

TOPIC TAGS: harmonic oscillator, transistorized oscillator, phase analysis

ABSTRACT: Certain considerations were cited in reference to the factors determining the phase stability of harmonic oscillators. A brief evaluation of different methods for the generation of harmonics from the point of view of phase stability was given. Two circuits using semiconductor devices were proposed for oscillators of broad uniform and alternate harmonic spectrums with increased phase stability. The necessary calculation formulas were derived. V. P. /Translation of abstract/
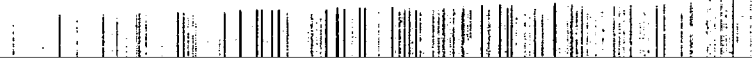
SUB CODE: 09

UDC: 621.373.072.6

Card 1/1

KOTIK, Viktor Ger... ...; ...NOVA, ..., ved. ...

[Automatic ... ... of ... ...
... ... transport... v. ...ckva, ...dr..., 1964, 206 p.
(... ... 17:12)

ONISHCHENKO, Yu.A., kand.tekhn.nauk; ZUBAREV, Yu.I., inzh.

Ways of approximating laboratory rock testing data to tests
made during mining. Izv.vys.ucheb.zav.; gor.zhur. 8 no.11:
21-26 '65.   (MIRA 19:1)

1. Donetskiy otdel Nauchno-issledovatel'skogo gornorudnogo
instituta (for Onishchenko). 2. Makeyevskiy nauchno-issledo-
vatel'skiy institut po bezopasnosti rabot v gornoy promyshlen-
nosti (for Zubarev). Submitted May 3, 1965.

ZUBAREV, Yu.P.

Effect of natural fracturing on the stability of outcrops.
Trudy Inst.gor.dela AN URSR no.11:37-46 '62.   (MIRA 16:2)
(Joints (Geology))   (Rock pressure)

ZUBAREV, Yu.P., inzh.-geolog

Role of fractured rocks in sudden outbursts. Ugol' Ukr. 7
no.7:49-50 Jl '63.   (MIRA 16:8)

1. Institut gornogo dela AN UkrSSR.
              (Mine gases)

ONISHCHENKO, Yu.A.; ZUBAREV, Yu.P.

"Effect of basic geological factors on the behavior of rocks in mine
workings" by P.V.Vasil'ev, S.I.Malinin.   Reviewed by IU.A.Onishchenko,
IU.P.Zubarev. Ugol' 37 no.11:62 N '62.   (MIRA 15:10)

1. Institut gornogo dela AN UkrSSR.
        (Coal geology) (Vasil'ev, P.V.)   (Malinin, S.I.)
                (Coal mines and mining)

AUTHORS: Lovchikov, V.S., Lipshits, B.M., Obidina, L.A., Zubarev, Yu.V.

TITLE: On the Problem of Extracting Tellurium From Alkali Lead Refining
              Melts

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Tsvetnaya metallurgiya,
              1961, No. 2, pp. 97 - 101

TEXT: The hydrometallurgical processing of alkali lead refining melts is
accompanied by the distribution of tellurium over all the products. Tellurium
may be concentrated in sodium antimonate by precipitation from strong alkali solu-
tions with antimony metal. (See tsvetnaya metallurgiya, #6, p. 93, 1959). To
determine optimum conditions of this process a series of experiments were per-
formed. The initial solution contained 1.1 g/l Te; 350 g/l NaOH and 65 g/l NaCl.
Tellurium was extracted from the solution with CУ-2 (SU-2) grade antimony of the
following grain sizes: - 3.2+1.5 mm, - 1.5+0.85 mm; - 0.85+0.42 mm and - 0.42+
+0.25 mm. When precipitating tellurium the theoretical amount of antimony of the
aforementioned granulometric composition was consumed, and also its two-, four-
and nine-fold excess in relation to the theoretical consumption. The experiments

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On the Problem of Extracting Tellurium From Alkali Lead Refining Melts

were performed in a glass container with a mechanical mixer into which 500 ml of
the alkali solution were filled. The solution was heated to 95°C. An iron-grid
basket containing antimony metal was placed into the hot solution and the mixer
was switched on. The temperature and volume of the solution, and the rotation
speed of the mixer were kept constant. Samples of the solution were subjected
to chemical analysis, as to their tellurium content. The results show that higher
consumption of antimony and smaller grain size raise the rate of separating tel-
lurium out of the solution. It is recommended to conduct tellurium extraction
from a strong alkaline solution at 95°C with a nine-fold excess of antimony over
the theoretical amount at -0.82+0.42 mm grain size for 3.5 hours. During reduc-
tion melting of sodium antimonate tellurium passes into the slag whose leaching
out with water is accompanied by the formation of a solid residue containing over
3% Te. From this product Te may be leached out by an aqueous solution of sodium
sulfide. To determine the optimum conditions of this process the authors studied
the effect of temperature, the concentration of sodium sulfide in the initial
solution, the liquid-solid ratio in the pulp and the time of leaching out. Leach-
ing out of tellurium from the solid residue was made in a glass container with a

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On the Problem of Extracting Tellurium From Alkali Lead Refining Melts

mechanical mixer, using an aqueous solution of sodium sulfide and a solid residue, containing (in %): 3.2 Te; 14.0 Sb; 14.1 SiO_2; 7.51 CaO; 2.9 Fe_2O_3; 2.14 MgO and 0.18 Al_2O_3. The pulp volume and rotation speed of the mixer were maintained constant. The results obtained show that Te should be leached out from a solid residue by a solution containing 60 g/l Na_2S, for 5 hours at 95°C and 12:1 liquid-solid ratio in the initial pulp. This assures a 93% transmition of Te into the solution. The solid residue (40%) contains (in %): 0.52 Te; 5.2 Sb; 29.7 SiO_2; 12.4 CaO; 4.1 Fe_2O_3; 3.8 MgO and 0.25 Al_2O_3. From the solution obtained tellurium was precipitated by sodium hydrosulfide (10 g per 1 g Te). Within 1.5 hours at 95°C, 95% Te in the form of metallic powder was extracted into the precipitate. The powder was extracted from the solution by filtrating the pulp. The dry powder contained 96% Te. After extracting tellurium a filtrate was obtained containing 32 g/l Na_2S and 20 g/l Na_2SO_x. The sodium hydrosulfide was removed from the solution with the aid of $Ca(OH)_2$. Optimum conditions for cleaning the sodium sulfide solution from sodium hydrosulfide were assured by using a 50% excess of calcium hydroxide in relation to the theoretical amount, and

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On the Problem of Extracting Tellurium From Alkali Lead Refining Melts

stirring of the pulp for one hour at 95°C. The solution so obtained may be used
for leaching out tellurium from new portions of solid residue. There are 9
figures and 1 Soviet reference.

ASSOCIATIONS: Krasnoyarskiy institut tsvetnykh metallov (Krasnoyarsk Institute
                of Nonferrous Metals), Kafedra metallurgii tyazhelykh tsvetnykh
                metallov (Department of Metallurgy of Heavy Non-Ferrous Metals)

SUBMITTED: May 18, 1960

Card 4/4

LOVCHIKOV, V.S.; LIPSHITS, B.M.; OBIDINA, L.A.; ZUBAREV, Yu.V.

Extraction of tellurium from saturated lead leaching reagents.
Izv. vys. ucheb. zav.; tsvet. met. 4 no.2:97-101 '61.
(MIRA 14:6)

1. Krasnoyarskiy institut tsvetnykh metallov, kafedra metallurgii
tyazhelykh tsvetnykh metallov.
(Leaching)
(Tellurium--Metallurgy)

ZUBAREVA, A. I.   and   GEL'BERG, Z. I.

"Experiments of the Use of Soviet Gramicidin and Penicillin in the Purifi-
cation of Smallpox Vaccine from Foreign Microflora," Trudy Institut Epidem. i
Mikrobiol. Min. Pub. Health, Kirghiz SSR, Frunze, Vol. 1, pp 40-43, 1951

ZUBAREVA, A. I.

"Observations on Dry Smallpox Vaccine," Trudy Instituta Epidemiologii i
Mikrobiologii Ministerstva Zdravookhraneniya Kirgizskoy SSR, Frunze, Vol. 1,
pp. 44-47, 1951

ZU'AREVA, A. I.

ZU'AREVA, A. I. -- "Preparation of ent-Resistant Variolar Vaccines and the Advantage of their Application Under Conditions in Kirgizdya." Cand Biol Sci, Tashkent Medical Inst, 10 Feb 54. (Pravda Vostoka, 15 Jan 54)

SO: SUM 168, 22 July 1954

ZUBAREVA, A. V.

BC

Growth of gastric epithelium in vitro. A. V. Zubareva. (Compt. rend. Acad. Sci. U.R.S.S., 1939, 23, 183—184).—Cells of the fundus of the stomach of new-born rabbits were grown by the hanging drop method in a medium of chicken embryonal extract and heparinised rabbit plasma. Gastric epithelium possesses all the properties of the endodermal group of tissues, viz., horizontal anisomorphy, unilaminar distribution, presence of prismatic elements, intercellular bridges, and closing bands. W. F. F.

ZUBAREVA, A.V.

Aubareva, A.V. "Experimental-histological investigations of the epithelial elements of the liver", Trudy Akad. med. nauk SSSR, Vol. I, 1949, p. 221-28.

SO: U-411, 17 July 53, (Letopis' Zhurnal 'nykh Statey, No. 20, 1949)

Zubareva, A. V. "The morphological properties of fibro-adenoma of the mammary gland",
     Trudy Akad. med. nauk SSSR, Vol. 1, 1949, p. 329-36, --Bibliog: 9 items.

SO: U-411, 17 July 1952, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949)

KOROBKOVA, G., NIKITINA, N., ZURAREVA, E., TROITSKAYA, V.

"Giant pulsations in the Soviet Arctic. (For the period 1935-1956)."

report presented at the Intl. Association of Geomagnetism and Aeronomy, Symposium on Rapid Geomagnetic Variations, Utrecht, Netherlands, 1-4 Sep 59.

TOPORKOVA, L.Ya.; ZUBAREVA, E.L.

Materials on the ecology of the grass frog in the Polar Urals.
Trudy Inst. biol. UFAN SSSR no.38:189-194 '65.

(MIRA 18:12)

ZUBAREVA, E.P.; NADUBOVICH, Yu.A.

New method for recording terrestrial currents.   Trudy IAFAN
SSSR. Ser. fiz. no.4:35-37 '62.   (MIRA 15:12)
                    (Terrestrial electricity)

SOV/5215

PHASE I BOOK EXPLOITATION

Akademiya nauk SSSR. Mezhduvedomstvennyy komitet po provedeniyu
Mezhdunarodnogo geofizicheskogo goda. III razdel programmy MGG:
Zemnoy magnetizm i zemnye toki.

Korotkoperiodicheskiye kolebaniya elektromagnitnogo polya zemli
(Short-Period Oscillations of the Earth's Electromagnetic
Field) Moscow, Izd-vo AN SSSR, 1961. 114 p. 1,800 copies
printed (Series IIs: Sbornik statey, No. 3)

Resp. Eds.: A. O. Kalashnikov, Doctor of Physics and Mathematics,
and V. A. Troitskaya, Candidate of Physics and Mathematics;
Ed.: Ye. P. Shchukina; Tech. Ed.: Ye. V. Makuni.

PURPOSE: This publication is intended for geophysicists.

COVERAGE: This collection of articles, published by the Inter-
departmental IGY Committee of the USSR Academy of Sciences,
treats problems of geomagnetics and telluric currents. In-
dividual articles deal with various (short-period, climatic,
steady, etc.) oscillations of the terrestrial electromagnetic
field, particularly in the arctic region. No periodicities
are mentioned. Brief English abstracts accompany each article.
References follow individual articles.

TABLE OF CONTENTS:

S/845/62/000/004/003/013
E192/E382

AUTHORS: Zubareva, E.P. and Nadubovich, Yu.A.

TITLE: A new method of recording earth currents

SOURCE: Akademiya nauk SSSR. Yakutskiy filial. Trudy. Seriya
            fizicheskaya. no. 4. 1962. Variatsii intensivnosti
            kosmicheskikh luchey., 35 - 37

TEXT: The measurement and recording of tellural currents by
mirror galvanometers suffers from many disadvantages and it was
therefore decided at the research station at Tiksi Bay to employ
for this purpose the automatic recording potentiometer, type
ЭПП-09. These recorders have a time-base velocity ranging from
60 to 9 600 mm/h and are fed from 127-V AC mains; their errors
do not exceed $\pm$ 0.5%. The method of using the potentiometer
recorder for measuring the currents is illustrated in Fig. 1. The
potential U to be determined is expressed as:

$$U = u_H R_M / R_H$$

where R_M is the inter-electrode potential and u_H is the
potential difference across R_H. The sensitivity of the device
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A new method of S/845/62/000/004/003/013
                                             E192/E382

is directly proportional to R_H but this should be less than
$100 \, \Omega$. The resistances R_1 and R_2 in Fig. 1, together with
the battery E, are used to shift the zero of the potentiometer
to the centre of the scale (since this is normally on the lefthand-
side end of the scale). The system was found satisfactory in that
its results were similar to those obtained with the galvanometer.
There are 2 figures.

Fig. 1:
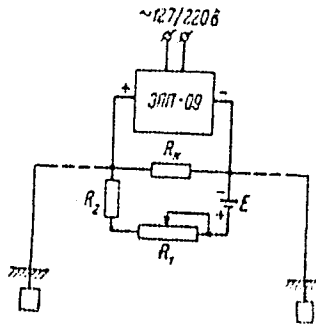
Card 2/2

29888
S/169/61/000/009/049/056
D228/D304

3.9410

AUTHOR: Zubareva, E. P.

TITLE: Preliminary results of observations of earth currents
               at Tiksi Bay

PERIODICAL: Referativnyy zhurnal Geofizika, no. 9, 1961, 27,
               abstract 9G219 (V sb. Korotkoperiod. kolebaniya
               elektromagnitn. polya Zemli, no. 3, M., AN SSSR, 1931,
               62-63)

TEXT.   The results of earth-current observations at the time of the
IGY are cited. The equipment and operating conditions are described in
detail. The maxima in the diurnal variation of P_t take place at 20 -
22 hrs. universal time, the maxima for P_c being at 2 - 8 hrs. (Febru-
ary - June 1958). The comparison of the mean diurnal amplitudes of the
magnetic field's horizontal-component and the telluric field's latitu-
dinal-component disclosed the good correlation between these phenomena.
At Tiksi, a coastal effect was observed in the earth currents: the

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Preliminary results of...

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electric field's intensity decreases with removal from the coast. The
hodograph of the potential gradient has the form of an elongated ellipse,
whose long axis is situated along the meridian. / Abstracter's note:
Complete translation./

Card 2/2

29727
S/169/61/C00/008/048/053
A006/A101

3,9110 (1121,1482)

AUTHORS: Zubareva, E.P., Korobkova, G.I., Nikitina, N.M., Troitskaya, V.A.

TITLE: Giant pulsations in Soviet Arctic during 1935 - 1956

PERIODICAL: Referativnyy zhurnal. Geofizika, no. 8, 1961, 59, abstract 8G262
          (V sb. "Korotkoperiod. kolebaniya elektromagnitn. polya Zemli, no.
          3", Moscow, AN SSSR, 1961, 76 - 82, English summary)

TEXT: The study of giant pulsations was carried out on the basic of stand-
ard recordings of the magnetic field with 20 mm/h scanning from data of the fol-
lowing 6 observatories: Dixon, Wellen, Matochkin Shar, Tiksi, Chelyuskin and
Tikhaya Bay. The greatest number of giant pulsations was recorded at the Wellen
and Dixon stations. Usually, giant pulsations were observed with T of about 60
and 90 seconds. For a number of stations T was also about 45, 75 and 135 sec.
It is possible that for giant pulsations there are one or two basic periods,
whose different harmonics appear differently depending on the local conditions
of the given station. The amplitudes of giant pulsations vary within the limits
from a few γ to several tens of γ. At Dixon and Wellen giant pulsations arise
mainly during the first half of the day. On Dixon the number of giant pulsations

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Giant pulsations in Soviet Arctic during 1935-1956   A006/A101

increases towards the equinox, for the Wellen station seasonal changes are less
marked. Simultaneous giant pulsations on a number of stations are rather seldom,
but some giant pulsations were recorded at the same time at Dixon and Wellen.
Sometimes giant pulsations are excited during the day at different but close
hours; in the majority of such cases they arise first at the stations located
more to the east. It is concluded that giant pulsations are disturbances of the
terrestrial electromagnetic field and are typical of polar aurora zones. They
damp rapidly to the north and south of the aurora.

K. Zybin

[Abstracter's note: Complete translation]

Card 2/2

USSR/Cultivated Plants - Fruits. Berries.   M

Abs Jour   :   Ref Zhur Biol., No 18, 1958, 82509

Author   :   Zubareva, G.

Inst   :   Omsk Institute of Agriculture

Title   :   Increasing the Germinating Ability of Cherry and Plum
                Seeds.

Orig Pub   :   S. kh. Sibiri, 1957, No 12, 43-46

Abstract   :   Trials at the Omskiy Institute of Agriculture showed that
                lengthening the preparatory period (stratification,
                raised or alternating temperatures) from 180-200 to 243-
                253 days increased the germinating ability: in Lyubskaya
                cherry by 44%, in Stepnaya by 20, in Bessaya by 15.3.
                In Ussuriyskaya plum by 18.3, in Karzinskaya plum by
                11.4%. It is best to prepare and store the seeds in a
                frost-proof cellar where conditions of outside environment

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Card

17.1450
21.6000

S/058/62/000/006/008/136
A061/A101

39111

AUTHOR: Zubareva, I. F.

TITLE: Beta count scintillators on polystyrene base with introduction of
             POPOP — (ROROR) as a luminescent addition

PERIODICAL: Referativnyy zhurnal, Fizika, no. 6, 1962, 10, abstract 6B74
             ("Byul. nauchno-tekhn. inform. po agron. fiz.", 1960, no. 8 - 9,
             55 - 58)

TEXT: A technique of plastic scintillator fabrication is described, and
some of the working characteristics of the material are considered. The depen-
dence of the effectiveness of beta-particle recording on scintillator thickness
and ROROR concentration indicates that the highest effectiveness, as measured
with a calibrated Sr^{90}-Y^{90} source, is achieved with a scintillator thickness of
42 mg/cm^2 and a ROROR concentration of 2%. It appears that the scintillator under
consideration permits the reliable analysis of mixtures of soft (S^{35}, Ca^{45}, Ce^{144})
and hard beta emitters (such as P^{32}, Sr^{89}, Sr^{90}-Y^{90}).

[Abstracter's note: Complete translation]   B. Levin

Card 1/1

L 44371-66   EWT(m)/EWP(j)/T   IJP(c)   RM/WH/JW

ACC NR: AP6023059   (A)   SOURCE CODE: UR/0191/66/000/004/0009/0011

AUTHOR: Zakoshchikov, S. A.; Zubareva, G. M.; Zolotareva, G. M. 40_β

ORG: none

TITLE: Effect of starting materials on the synthesis of polyamidoacids and their hydrolytic stability

SOURCE: Plasticheskiye massy, no. 4, 1966, 9-11

TOPIC TAGS: reaction rate, polyamide, synthetic material, polyester plastic

ABSTRACT: Kinetics of formation of the high molecular weight polyamidoacids from pyromellitic anhydride (PA) and methylphenylenediamine (MPD), paraphenylenediamine (PPD), hexamethylenediamine (HMD), 4,4'diaminodiphenylmethane (DPM), and 4,4-diamino--diphenyl ester (DPE) was studied in dimethylformamide solvent. The hydrolytic stability of the product polyamidoacids and the effect of reactivity of diamines on the quality of the product polymers were also investigated. It was found that the optimum concentrations of the individual diamines were: 10% for PPD, 20% for MPD, and 15% for HMD. A maximum specific viscosity of the polyamidoacid equal to 0.8-0.9 was achieved from reaction of pyromellitic anhydride with methylphenylenediamine at 0.2% H_2O in dimethylformamide. It was found that the reactivity of the diamide declines in the following order: hexamethylenediamine>decamethylenediamine>4,4'-diaminodiphenylmethane>

UDC: 547.582.4

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