DMITRIYEV, Ye.

[From Teberda to the Black Sea] Ot Teberdy do Chernoto Moria.
[Moskva, Izogiz. 1955 5 p.] 12 post cards (in portfolio)
        (Georgia--Views)   (MLRA 8:10)

DMITRIYEV, Yevgeniy; DOBRONRAVOVA, K.O., redaktor; KOSHRIEVA, S.M.,
      tekhnicheskiy redaktor

[Caucasian mineral waters; a brief guidebook] Kavkazskie mineral'nye
vody; kratkii putevoditel'. Moskva, Gos. izd-vo geogr. lit-ry, 1956.
65 p.   (MLRA 9:12)
      (STAVROPOL TERRITORY--HEALTH RESORTS, WATERING PLACES, ETC.)

DMITRIYEV, Ye. A.: Master Biol Sci (diss) -- "The heat content of the soil".

Moscow, 1958. 11 pp (Moscow Order of Lenin and Order of Labor Red Banner

State U im M. V. Lomonosov, Soil-Biology Faculty), 120 copies (KL, No 2, 1959,

119)

DMITRIYEV, Ye.A.

Heat capacity of bound water. Nauch. dokl. vys. shkoly; biol. nauki
no.2:168-171 '58. (MIRA 11:10)

1.Predstavlena kafedroy fiziki i melioratsii pochv Moskovskogo
gosudarstvennogo universiteta imeni M.V. Lomonosova.
(Soil temperature) (Soil moisture)

DMITRIYEV, Ye.A.

Some factors determining the specific heat of the solid phase
of soils. Vest.Mosk.un.Ser.biol.,pochv.,geol.,geog. 13 no.4:
103-111 '58.   (MIRA 12:4)

1. Kafedra fiziki i melioratsii pochv Moskovskogo universiteta.
                    (Soil physics)

ZHABREV, Daniil Vasil'yevich; MEKHTIYEV, Shafayat Farkhadovich; PUSTOVALOV,
L.V., otv.red.; DMITRIYEV, Ye.Ya., zam. otv.red.; TOPCHIYEV,
A.V., akademik, red.; MIRONOV, S.I., akademik; red.; ALIYEV,
M.M., red.; AKHMEDOV, G.A., red.; VARENTSOV, M.I., red.;
DOLGOPOLOV, N.N., red.; IL'IN, A.A., red.; MIRCHINK, M.F., red.;
MOZESON, D.L., red.; FOMIN, A.V., red.; POLEVA, Ye.M., red.izd-va;
KASHINA, P.S., tekhn.red.

[Bituminology of the Tertiary complex of southeastern Azerbaijan]
K bituminologii tretichnogo kompleksa iugo-vostoka Azerbaidzhana.
Moskva, Izd-vo Akad.nauk SSSR, 1959. 110 p.   (MIRA 12:6)

1. Chlen-korrespondent AN AzSSR (for Mekhtiyev). 2. Chlen-
korrespondent AN SSSR (for Pustovalov, Varentsov, Mirchink).
3. Deystvitel'nyy chlen AN AzSSR (for Aliyev).
          (Azerbaijan--Bitumen)

DMITRIYEV, Ye. A.

Some factors determining the specific heat and its variation
in the anhydrous mineral portion of soils and rocks. Vest.
Mosk. un. Ser. biol., pochv., geol, geog. 14 no.3:79-84 '59.

1. Kafedra fiziki i melioratsii pochv Moskovkogo universiteta.
        (Soils--Thermal properties)
        (Rocks--Thermal properties)

DMITRIYEV, Ye.A.; ANTONOV, S.N.

Lomonosov Lectures in the Section of Agriculture and Biology. Vest.
Mosk.un.Ser 6: Biol., pochv. 15 no.3:76-78 My-Je '60.
(MIRA 13:7)

(Agriculture)   (Physiology)

DMITRIYEV, Ye.A.

      Effect of moisture content on some physical properties of soil.
Nauch. dokl. vys. shkoly; biol. nauki no. 1:203-206 '61.
                                  (MIRA 14:2)

1. Rekomendovana kafedroy fiziki i melioratsii nochv Moskovskogo
gosudarstvennogo universiteta im. M.V. Lomonosova.
              (SOIL MOISTURE) (SOIL PHYSICS)

DMITRIYEV, Ye.Ya.; ROVNIN, L.I.; ERV'YE, Yu.G.

Current problems of oil and gas prospecting in Western Siberia.
Geol. nefti i gaza 9 no.9:4-11 S '62.   (MIRA 16:2)

1. Glavnoye upravleniye geologii i okhrany nedr pri Sovete Ministrov
RSFSR i Tyumenskoye geologicheskoye upravleniye.
                (Siberia, Western—Petroleum Geology)

DMITRIYEV, Ye.A.

Evaluation of the relative variation of the property under
investigation and determination of the index of relative
probable error. Vest. Mosk. un. Ser. 6: Biol., pochv. 18
no.5:51-58 S-O '63.   (MIRA 16:10)

1. Kafedra fiziki i melioratsii pochv Moskovskogo universiteta.

ACCESSION NR: AP4033129   S/0120/64/000/002/0126/0127

AUTHOR: Makov, B. N.; Yelizarov, L. I.; Dmitriyev, Ye. A.

TITLE: Methods of measuring dissociation cross-sections of H_2^+ fast ions passing through gas targets

SOURCE: Pribory* i tekhnika eksperimenta, no. 2, 1964, 126-127

TOPIC TAGS: cross section, dissociation cross section, hydrogen ion dissociation, hydrogen ion dissociation cross section, collision chamber, gas target

ABSTRACT: To obviate the difficulties in selecting slits in the dissociation cross-section measurements, a new arrangement (see Enclosure 1) is suggested' in which the currents are measured directly in the collision chamber. The hydrogen-ion beam is admitted into the analyzer chamber ACh through slit S_1. The collision chamber CCh is separated by a partition which helps in trapping

Card 1/82

ACCESSION NR: AP4033129

extraneous ions. Both chambers are traversed by a magnetic field produced by an electromagnet. The beam focused with a 90° deviation passes slit S_2. The initial ion-beam current is measured immediately beyond S_2 by a retractable receiver $\cap$. The proton current i_{H+} is measured by a receiver P. A 100-kev hydrogen-ion beam was passed through 4x8- and 3x10-mm slits, respectively. The current measured was 25 microamp; pressure in the collision chamber, $(3.5-15) \times 10^{-5}$ torr; total cross-section, 6.3×10^{-16} cm^2 per molecule, and $f = 1.1$. Orig. art. has: 1 figure.

ASSOCIATION: none

SUBMITTED: 17Sep62   DATE ACQ: 11May64   ENCL: 01

SUB CODE: NS   NO REF SOV: 001   OTHER: 001

Card: 2/2

DMITRIYEV, Ye.A

Possibility of statistical evaluation of the accuracy of results obtained from analyses carried out without repetition. Nauch. dokl. vys. shkoly; biol. nauki no.4:197-204 '64.   (MIRA 17:12)

1. Rekomendovana kafedroy fiziki i melioratsii pochv Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova.

DMITRIYEV, V. .

Determining fractions of various areas on soil and other maps.
Pochvovedenie no.8:99-109 Ag '65.   (MIRA 18:9)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.

NESTURKH, M.F.; GLADKOVA, T.D.; PORSHNEV, B.F.; SHAYER, Ye.G.; NIKITYUK,
        B.A.; PAVLOV, B.K.; DMITRIYEV, Ye.A.; LINKOVSKIY, Zh.B.;
        PLOKHINSKIY, N.A.; LAVROVA, I.G.; BORISOV, G.V.

Brief news. Biul. MOIP. Otd. biol. 70 no.3:127-140 My-Je '65.
                                              (MIRA 18:10)

DMITRIYEV, Ye. D.

Region of Fantastic Rocks, Priroda. No 2, 1952.

1. DMITRIYEV, Ye. [D.]

2. USSR (600)

4. Beletskiy, Ye. A.

7. On the highest point of Soviet Land ("Stalin Peak." E. A. Beletskiy. Reviewed
   by Ye.Dmitriyev) Vokrug sveta no. 10, 1952

9. <u>Monthly</u> <u>List</u> <u>of</u> <u>Russian</u> <u>Accessions</u>, Library of Congress, January   1953. Unclassified.

DMITRIEV, Evgeniy, Ivanovich

The measurement of slight displacements by the inductive method.   Moskva., Izd-vo
Akademii nauk SSSR, 1945.   119 p.   (51-20595)

T50.D5

DMITRIYEV, Ye.I.

8A   B 64
                                                       o

621.317.7 27 = 82   2855
Calculation of functional voltage dividers. Dmitriev, E. I. Elektrichestvo
(No. 5) 81-3 (1946) In Russian. - A mathematical treatment for the general
case of a loaded voltage divider, the slider of which supplies an
output voltage to a predetermined law.   A. L.

DMITRIYEV, YE. I.   PA 17/49T25

USSR/Electronics   Jun 48
    Circuits, Bridge
    Calculators

"Bridge Systems Used for Calculating and Analyzing
Purposes," Ye. I. Dmitriyev, Cand Tech Sci, Inst
of Mach Studies, Acad Sci USSR, 2 3/4 pp

"Elektrichestvo" No 6

Explains principle of using bridge circuit for
evaluating polynomials and determining real roots
of algebraic equations of any degree.

                                    17/49T25

DMITRIYEV, Ye. I.

USSR/Electronics   Aug 48
        Calculators
        Computors, Electronic

"Potentiometric and Bridge Type Computer-Calculator Systems," Ye. I. Dmitriyev, 17 3/4 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 8

Treats subject under following headings: (1) calcu-
lation of functional resistances and voltage
dividers; (2) potentiometric computer and calculator
circuits; (3) bridge computer and calculator circuits.
Submitted 24 May 48.

12/49T24

PA 22/49115

DMITRIYEV, YE. I.

USSR/Electricity   Oct 48
       Transformers
       Coils, Compensating

"High Accuracy Voltage Measuring Transformer,"
Docent Ye. I. Dmitriyev, Cand Tech Sci, Inst
Mach Sci, Acad Sci USSR, 2 pp

"Elektrichestvo" No 10

Describes use of compensating coil for increasing
accuracy of measuring transformer.

22/49115

NEMENOV, Aleksandr Yakovlevich; DMITRIYEV , Yavgoniy Ivanovich
KUKOLEVSKIY, G.M., red.; PETROVA, N.K., tekhn. red.

[Provision for medical aid at sports competitions; the
problems of organization]Meditsinskoe obespechenie sportiv-
nykh sorevnovanii; voprosy organizatsii. Moskva, Medgiz,
1962.   172 p.

(SPORTS MEDICINE)   (MIRA 15:10)

DMITRIYEV, Ye.N.

    Gammagraphic examination of the bottom of a diesel locomotive
piston. Trudy TASHIIT no.18:5-8 '61.   (MIRA 18:3)

DMITRIYEV, Ye. S.

AUTHOR: Dmitriyev, Ye. S.;
            Neyyenkirkhen, Yu.N.

TITLE: Tyres of Increased and High Wear Resistance (Shiny
            povyshennoy i vysokoy prokhodimosti)

ABSTRACT: Traction of vehicles can be improved by all-wheel drive,
            by using special tyres and by providing vehicles with
            a centralized tyre pressure inflation and regulating
            system. The supporting capacity of a tyre depends on
            the distribution and specific pressure of contact
            between the tyre and ground. Normal tyres, inflated
            to 45 psi and above have high specific pressure and
            give poor traction on bad ground. Specific contact
            pressure depends upon the tyre pressure and the radial
            stiffness of the tyre casing. The tyre pattern
            influences radial stiffness and determines the grip
            of the tyre on the soil. The relation between tyre
            pressure and specific contact pressure for a tyre on
            soft ground is shown in Fig.1. Low pressure tyres
            give greater supporting capacity but increase rolling
Card 1/4   friction and fuel consumption. A table is given for

SOV/138-58-5-5/9

Tyres of Increased and High Wear Resistance

suitable pressures in extra-low-pressure tyres for
different types of ground. With extra-low pressure
tyres the radial stiffness of the tyre must be
reduced as much as possible by using casings of
relatively low thickness. V.F.Babkov showed that
traction depends largely on the area of the section
of the soil contained between adjacent elements of the
tyre pattern; increased tyre width not only gives
larger area of contact but enables larger sections of
soil to be held between the tyre pattern. Fig.2. shows
the relation between the gripping force (kg) and the
slip (cm) for a tyre 1 metre diameter and 200 mm wide,
loaded with 700 kg with two different dimensions of the
tread pattern (L and K, 5 cm for curve 1. and 2 cm for
curve 2.). The importance of ability of the tyre to
compact the soil is discussed; the specific pressure
at the centre of the area of contact must be low.
Self-cleaning of the tread is important. Special tyres
Card 2/4   were designed by NIIShP to give both high supporting

SOV/138-58-5-5/9

Tyres of Increased and High Wear Resistance

capacity and good traction. Arched profile tyres were
designed for extremely low pressures. Vehicles were
adapted to enable the tyre pressures to be altered
while the vehicle was in motion. Wheels with special
rims were produced to enable extra-low pressure tyres
to be used without slip on the wheel. The dimensions
and details of extra-low pressure tyres are compared
with standard tyres in Table 1. Fig.7. shows the
percentage radial deformation against tyre pressure
for different sized tyres under 1500 kg. load. Figs.8
and 9 show the overall contact area and specific pressure
for the same conditions against tyre pressure. Table 3
gives dimensions and capacities of a range of low
pressure tyres. Arch profile tyres were introduced to
enable very wide tyres to be made without excessively
large diameter. A cross-section of such a tyre is
shown in Fig.12. Such tyres can be used instead of
twin wheels as seen in Fig.14. Reference is made to
"Lipsoid" tyres and to Kleber-Colombe "Spheric" tyres.
Table 4 gives data on two types of Arch profile tyres
produced by OKB (experimental construction bureau)

Card 3/4

Tyres of Increased and High Wear Resistance

Yaroslavl' tyre factory. Fig.13 shows a tubeless
1000-650 sized Arch profile tyre. Fig.15 shows
percentage radial deformation of this tyre against load
for various pressures. Arch profile tyres give low
specific pressure at the centre of the area of contact.
Tests show that fuel consumption of vehicles with
arched tyres was 25 – 30% less than with standard tyres
on soft ground but 15% higher on firm ground. Lives of
8000-10000 km. are recorded. Some 150 lorries were
fitted with these tyres in 1957, they were also used
successfully on combines. The article concludes with
mention of "Rolligon" tyres where the width of the tyre
is greater than the diameter. These tyres can be worked
at pressures of 0.25 kg/cm^2 (4 psi) or less. There are
16 figures and 4 tables.

Card 4/4

DMITRIYEV, Ye. Ya.

KLENOVA,M.V.prof.;SOLOV'YEV,V.F.;ARTYUNOVA,N.M.;POPOV,P.G.; YASTREBOVA,L.A.;
BATURIN,V.P.; KOPYLOVA,Ye.K.;TEODOROVICH,G.I., redaktor;TOPCHIYEV,
A.V., akademik, redaktor; MIRONOV,S.I., akademik, redaktor;ALIYEV,
M.M., redaktor; AKHMEDOV,G.A., redaktor; VARENTSOV,M.I., redaktor;
DMITRIYEV,Ye.Ya., redaktor; DOLGOPOLOV,N.N., redaktor; IL'IN,A.A.,
redaktor; MEKHTIYEV,Sh.F., redaktor; MOZESON,D.L., redaktor; PUSTO-
VALOV,L.V., redaktor; FOMIN,A.V., redaktor; NOSOV,G.I., redaktor;
KISELEVA,A.A., tekhnicheskiy redaktor

[Recent sediments of the Caspian Sea] Sovremennye osadki Kaspiiskogo
moria; Moskva, Izd-vo Akademii nauk SSSR, 1956. 302 p.   (MIRA 9:3)

1. Deyetvitel'nyy chlen AN AzSSR (for Aliyev) 2. Chlen-korrespondent
AN SSSR. (for Varentsov, Pustovalov) 3. Nachal'nik morskogo otryada
Azerbaydzhanskoy neftyanoy ekspeditsii SOPS AN SSSR (for Klenova)
(Caspian Sea)

PUSTOVALOV, L.V., otvetstvennyy red.; DMITRIYEV, Ye.Ya., zamestitel'
    otvetstvennogo red.; TOPCHIYEV, A.V., akademik, red.; MIRONOV,
    S.I., akademik, red.; ALIYEV, M.M., red.; AKHMEDOV, G.A., red.;
    VARENTSOV, M.I., red.; DOLGOPOLOV, N.N., red.; IL'IN, A.A., red.;
    MEKHTIYEV, Sh.F., red.; MIRCHINK, M.F., red.; MOZESON, D.L., red.;
    RENGARTEN, V.P., red.; FOMIN, A.V., red.; IL'INA, N.S., red.
    izd-va; NOVICHKOVA, N.D., tekhn. red.

[Geology of the Talysh Mountains; papers of the expedition]
Voprosy geologii Talysha; trudy ekspeditsii. Moskva, 1958. 151 p.
                                                    (MIRA 11:9)
1. Akademiya nauk SSSR. Sovet po izucheniyu proizvoditel'nykh sil.
Azerbaydzhanskaya neftyanaya ekspeditsiya. 2. Deystvitel'nyy
chlen Akademii nauk AzSSR (for Aliyev). 3. Chlen-korrespondent
Akademii nauk SSSR (for Varentsov, Mekhtiyev, Pustovalov,
Rengarten).
                (Talysh Mountains—Geology)

DMITRIYEV, Ye.Ya.

Results of geological prospecting for oil and gas in new regions of the R.S.F.S.R. for 1961. Geol.nefti i gaza 6 no.5:1-8 My '62.   (MIRA 15:5)

1. Glavnoye upravleniye geologii i okhrany nedr pri Sovete Ministrov RSFSR.
          (Petroleum geology) (Gas, Natural--Geology)

DMITRIYEV, Ye.Ya.; MELIK-PASHAYEV, V.S.

Prospecting and the development of large platform oil pools as a
function of the geological nonuniformity of the producing layers.
Neftegaz.geol. i geofiz. no.9:3-9 '63.   (MIRA 17:3)

1. Vsesoyuznyy neftegazovyy nauchno-issledovatel'skiy institut.

AVROV, V.Ya.; BLINNIKOV, I.A.; BROD, I.O.[deceased]; BUYALOV, N.I.;
VASIL'YEV, V.G.; DMITRIYEV, Ye.Ya.; YELIN, N.D.; YEROFEYEV,
N.S.; ZUBOV, I.P.; KALININ, N.A.; KUDRYASHOVA, N.M.; MAKSIMOV,
S.P.; L'VOV, M.S.; MIRCHINK, M.F.; OVCHINNIKOVA, T.G.;
SIMAKOV, S.N.; TROFIMUK, A.A.; TKHOSTOV, B.A.; FEDOTOVA, M.I.,
ved. red.

[Predicting gas potential of the U.S.S.R.] Prognoz gazonosno-
sti SSSR. Leningrad, Gostoptekhizdat, 1963. 175 p.
(MIRA 17:4)

DMITRIYEV, Yu., inzhener.

Work experience of coke-gas filling stations. Avt.transp.33 no.10:
16-17 O '55.   (MLRA 9:1)

1.Nachal'nik Stalinskoy gazonapolnitel'noy stantsii no.2
(Service stations) (Automobiles--Engines (Compressed gas))

DMITRIYEV, Yu.

Construction of a hydroelectric power station to serve more than one collective farm. Sel'.stroi. 11 no.5:5-6 My '56.   (MLRA 9:9)

1.Glavnyy inzhener tresta "Ukrsel'elektrostroy".
(Glubochekskaya Hydroelectric Power Station)

DMITRIYEV, Yu.

First Soviet traffic regulations. Za rul. 17 no.4:5 Ap '59.
(MIRA 12:6)
(Traffic regulations)

DMITRIYEV, Yu.

Treating wood with antiseptic pastes. Sil'.bud. 10 no.5:
9-10 My '60.   (MIRA 13:7)

1. Glavnyy inzh. tresta "Ukrsel'elektrostroy."
              (Wood—Preservation)

DMITRIYEV, Yu.

Mechanizing labor-consuming operations during the number
two technical inspection of motortrucks. Avt.transp.
38 no.8:13-14 Ag '60.   (MIRA 13:8)

1. Glavnyy inzhener Kalinovskoy avtobazy avtoupravleniya
Stalinskogo sovnarkhoza.
                (Motortrucks--Maintenance and repair)

DMITRIYEV, Yuriy.

Rare birds. Znan.sila 31 no.5:21-22 My '56.   (MIRA 9:8)
                (Moscow--Tropic-birds)

DMITRIYEV, Yuriy.

In the land of orang-outangs and birds of paradise. Znan.sila 31
no.10:31-34 0 ' 56.
(Malay Archipelago--Zoology)

(MLRA 9:11)

SOURCE: Nauchno-tekhnicheskiye obshchestva SSSR, no. 4, 1965, 43-45

TOPIC TAGS: aircraft, lighter than air aircraft

ABSTRACT: In a dirigible-design bureau in Novosibirsk, a project is under way for the construction of two dirigibles, Novosibirsk-1 and -2, which are to be used in a wide variety of operations. Novosibirsk-1, with a nonrigid construction, has a 6 ... 1-ton load capacity. The airship, 55 m long and 12 m in diameter, to be equipped with 1 or 2 engines and will carry a 3-man crew. Novosibirsk-2, of semirigid construction, will be 115 m in diameter and will have a 70,000-m^3 volume. ... lift a 3-ton ... is to be equipped with 4 piston-driven ... The airpeed for both of these dirigibles will be ... It is plan ... design transport by dirigible will be ...

Card 1/2

L 39684-65
ACCESSION NR: AP5010565

SUBMITTED: 00   ENCL: 00   SUB CODE: AC, GO

NO REF SOV: 000   OTHER: 000   ATD PRESS: ...

Card   2/2

Translation from: Referativnyy zhurnal, Fizika, 1959, Nr 12, p 232 (USSR)

SOV/58-59-12-28101

AUTHOR: Dmitriyev, Yu.A.

TITLE: On the Possibility of Obtaining a Progressive Wave in a Closed
              Waveguide

PERIODICAL: Uch. zap. Novosib. gos. ped. in-t, 1958, Nr 13, pp 63-66

DMITRIYEV, Yu.

Barges can be brought in by the pusher method by motorships with dry bulk cargo. Rech. transp. 20 no.9:44 S '61.   (MIRA 14:9)

1. Kapitan GK-204 Yeniseyskogo parokhodstva.
                    (Towing)

AUTHOR: Dmitriyev, Yu. A.   SOV/109-4-6-8/27

TITLE: Turning Points in Waveguides of Variable Cross-section
            (Tochki povorota v volnovodakh peremennogo secheniya)

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 6,
            pp 966 - 971 (USSR)

ABSTRACT: A "flat" waveguide with a slowly changing cross-section is
            considered. The change is a function of the positive
            direction ξ. Only one point ξ can exist where
            $k_n^2(\xi)$ becomes 0 (Ref 1 - V.L. Pokrovskiy et al). The
            following formula is introduced:

$$x_n = \frac{1}{\alpha} \int_{\xi_n}^{\xi} k_n(\xi')d\xi' \qquad (1) .$$

            The solution of the required equqtion (Ref 1) can be
            represented as:

Card1/3

$$U_{n0} = A_n \Gamma^{-1/2}(\xi) k_n^{-1/2}(\xi) x_n^{1/6} v_n(x_n) \tag{2}$$

where v is expressed in terms of Bessel functions. This function can be represented in the form of Eq (3), where $\Phi(\xi)$ is the Airy function. Eq (2) can, therefore, be approximately represented by Eqs (4) and (5). The solution of the equation in the first approximation (Ref 1) can be expressed by means of the Green function G_n . This is represented by Eqs (8). The approximation is given by Eq (10). The asymptotic solution of this, for large ξ , can be represented by Eq (11), where the parameters Δ and M are defined by Eqs (12). The quantity M can be represented as a sum of $M^{(1)}$ and $M^{(2)}$; these can be expressed by Eqs (19) and (28), respectively. Consequently, the final expression for M is given by Eq (30). The first approximation is, therefore, expressed by Eq (31).

Card2/3   The author expresses his gratitude to L.V. Pokrovskiy,

Turning Points in Waveguides of Variable Cross-section SOV/109-4-6-8/27

F.R. Ulinich and S.K. Savvinykh for allowing him to get acquainted with the article "The Theory of the Waveguides of Variable Cross-section", prior to its publication. There are 5 Soviet references.

SUBMITTED: April 1, 1958

Card 3/3

DMITRIYEV, Yu.A.

Frequency conditions of the dissipativeness and existence of periodic solutions to pulse systems with one nonlinear block. Dokl. AN SSSR 164 no.1:28-31 S '65.   (MIRA 18:9)

1. Submitted February 13, 1965.

L 4287-66   EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)   IJP(c)   BC

ACC NR: AP5023994   UR/0020/65/164/002/0263/0266

AUTHOR: Dmitriyev, Yu. A.

TITLE: Frequency conditions for the absolute stability of automatic impulse systems with one non-linear block

SOURCE: AN SSSR. Doklady, v. 164, no. 2, 1965, 263-266

TOPIC TAGS: asymptotic solution, control system

ABSTRACT: Sufficient conditions are given for the asymptotic stability (in the large) of the trivial solution of a control system with a finite number of degrees of freedom. The results generalize known criteria (those of Tsypkin, Szego, Szego-Kalman, and earlier results of the author). The proofs are based on the matrix-inequality methods of Yakubovich. The system is given in the form

$$x_{t+1} = Px_t + q\varphi(\sigma_t), \quad \sigma_t = r^*x_t, \quad t = 0, 1, \ldots, \qquad (1)$$

where x, q, r are real ν-vectors (r^* is the transpose of r), $\varphi(\sigma)$ a continuous real scalar function, P a real ν by ν matrix. Hypotheses: (A) all characteristic roots π_j of P satisfy $|\pi_j| \leqslant 1$, ($j = 1, \ldots, \nu$; (B) vectors q, $Pq, \ldots, P^{\nu-1}q$ are linearly independent; (C) $\varphi(0) = 0$, and $\sigma_1 \neq \sigma_2$ implies $\alpha_1 \leqslant (\sigma_2 - \sigma_1)^{-1}[\varphi(\sigma_2) - \varphi(\sigma_1)] \leqslant \alpha_2$,

Card 1/2

L 4287-66

ACC NR: AP5023994

2

where $a_1 \leqslant 0, a_2 > 0.$; (D) if $|\pi_j| < 1$, $j = 1, \ldots, \nu$, then $0 \leqslant \sigma^{-1}$ $\varphi(\sigma) \leqslant \mu_0$ for all $\sigma \neq 0$, $(0 < \mu_0 \leqslant a_2)$; if $|\pi_j = 1|$ for at least one j, then $0 < \varepsilon \leqslant \varepsilon^{-1} \varphi(\sigma) \leqslant \mu_0$ for all $\sigma \neq 0$ $(\varepsilon < \mu_0 \leqslant a_2)$.

Let

$$\Phi_k(\lambda, \vartheta, \xi) = \mu_0^{-1} + \text{Re}\chi(\lambda) - \vartheta(-1)^k[\text{Re}(1-\lambda)\chi(\lambda) +$$
$$+ \tfrac{1}{2}a_k |(1-\lambda)\chi(\lambda)|^2] + \xi|1-\lambda|^2[1 + (a_1 + a_2)\text{Re}\chi(\lambda) +$$
$$+ a_1 a_2 |\chi(\lambda)|^2], \quad k = 1, 2; \qquad (2)$$

Criterion 1: All π_j satisfy $|\pi_j| < 1$, and for some $\vartheta \geqslant 0, \xi \geqslant 0$ and all $\lambda, |\lambda| = 1$, either $\Phi_1(\lambda, \vartheta, \xi) > 0$ or $\Phi_2(\lambda, \vartheta, \xi) > 0$

Criterion 2: All π_j satisfy $|\pi_j| \leqslant 1$; there is a $\mu_*, \varepsilon \leqslant \mu_* \leqslant \mu_0$, such that the spectrum of $P_* = P + \mu_* q r^*$ lies within the unit circle; for some $\vartheta \geqslant 0, \xi \geqslant 0$, and all λ such that $|\lambda| = 1$, either $\Phi_1(\lambda, \vartheta, \xi) \geqslant 0$ or $\Phi_2(\lambda, \vartheta, \xi) > 0$. Orig. art. has: 8 formulas.

ASSOCIATION: Sibirskiy nauchno-issledovatel'skiy institut energetiki (Siberian Scientific Research Institute of Power Engineering)

SUBMITTED: 04Mar65   ENCL: 00   SUB CODE: MA

NR REF SOV: 007   OTHER: 003

Card 2/2

DMITRIYEV, Yu.D.; OSIPOV, N.F.; DERIM-OGLU, Ye.N., kand. biol.
nauk, red.; SULTANOVA, N., red.; KUZNETSOVA, A., tekhn.red.

[On the shore of the Oka River; a story about the Oka
Terrace Preserve] Na beregu Oki; rasskaz o Priksko-
Terrasnom zapovednike.   Moskva, Mosk. rabochii, 1963. 83 p.
(MIRA 16:4)

(Oka Terrace Preserve)

REVNIVTSEV, V.I.; DMITRIYEV, Yu.G.; TOPYCHKANOV, N.Ya.; PESKOV, V.V.;
        KHOROBRYKH, A.V.

Use of ultrasonic waves to dress quartz sand. Stek. i ker. 18
no.11:19-21 N '61.   (MIRA 15:3)
        (Sand) (Ultrasonic waves--Industrial applications)

IZMODENOV, A.I.; IZMODENOV, Yu.A.; DMITRIYEV, Yu.G.

Dressing and refining titanium concentrates by reduction roasting
in induction furnaces with subsequent magnetic separation. Titan
i ego splavy no.5:38-49 '61.   (MIRA 15:2)
                    (Titanium--Electrometallurgy)
                    (Magnetic separation of ores)

DMITRIYEV, Yu.G.; IZMODENOV, A.I.; IZMODENOV, Yu.A.; KVASKOV, A.P.
       NAGIRNYAK, F.I.

    Magnetizing roasting of Lisakovskoye deposit ores without a redu-
    cing agent. Gor zhur. no. 6:57-60 Je '61.   (MIRA 14:6)
                    (Kustanay region--Iron ores)
                    (Ore dressing)

REVNIVTSEV, V. I.; DMITRIYEV, Yu. G.

"Ultrasonic Cleaning of Minerals."

report submitted to 7th Intl Cong on Mineral Processing, New York, 20-24 Sep 64.

REVNIVTSEV, V. I.; DMITRIYEV, Yu. G.

"Ultrasonic cleaning of minerals."

report submitted for 7th Intl Mineral Processing Cong, New York, 20-25 Sep 64.

DMITRIYEV, Yu.I.

Old volcanic formations in the Chona Valley. Izv.vys.ucheb.
zav.; geol.i razv. 2 no.4:86-93 Ap '59.   (MIRA 12:12)

1. Institut geologii rudnykh mestorozhdeniy petrografii,
mineralogii i geokhimii AN SSSR.
          (Chona Valley--Volcanoes)

DMITRIYEV, Yu.I.

Magmatism of trap rocks and the genesis of Iceland spar in the
Chona Valley. Biul.MOIP.Otd.geol. 34 no.4:152-153 Jl-Ag '59.

(MIRA 13:8)

(Chona Valley--Rocks, Igneous)

DMITRIYEV, Yu.I.

Magmatism of traps and hydrothermal mineralization in the
Chona Valley. Sov.geol. 2 no.10:33-47 O '59.
(MIRA 13:4)

1. Institut geologii rudnykh mectoroshdeniy petrografii,
mineralogii i geokhimii (IGEM).
(Chona Valley—Mineralogy)

DMITRIYEV, Yu. I., Cand Geol-Min Sci -- (diss) "Trappean magmatism and the genesis of Iceland spar in the Chona River." Moscow, 1960. 28 pp; (Academy of Sciences USSR, Inst of the Geology of Ore Deposits, Petrography, Mineralogy, and Geochemistry); 150 copies; price not given; printed on duplicating machine; (KL, 17-60, 144)

DMITRIYEV, Yu.I.

Nature of the contact of upper-Paleozoic and lower-Mesozoic sediments
in the Chona Basin. Biul.MOIP.Otd.geol. 35 no.4:110-113 Jl-Ag
'60. (MIRA 14:4)
(Chona Valley--Geology, Stratigraphic)

DMITRIYEV, Yu.I.

Characteristics of the structure and formation of the sill of
palagonite trap rocks in the Chona Valley (Eastern Siberia).
Trudy IGEM no.77:19-34 '62.   (MIRA 16:2)
            (Chona Valley—Rocks, Igneous)
            (Chona Valley—Sills (Geology))

DIMITRIYEV, Yuriy Ivanovich; LEBEDEV, A.P., otv.red.; SHLEPOV, V.K.,
   red.izd-va; GOLUB', S.P., tekhn. red.

[Trap rocks and Iceland spars of the Chona Valley] (Yakutsk ASSR).
Trappy i islandskii shpat reki Chony (IAkutskaia ASSR). Moskva,
Izd-vo Akad. nauk SSSR, 1963. 134 p. (Akademiia nauk SSSR.
Institut geologii rudnykh mestorozhdenii, petrografii, mineralo-
gii i geokhimii. Trudy, no.88)   (MIRA 16:3)

           (Chona Valley--Rocks, Igneous)
                 (Chona Valley--Iceland spar)

DMITRIYEV, Yu.I.

Volcanic bombs in tuffs of the Siberian trap rock formation.
Trudy Lab. paleovulk. Kazakh. gos. un. no.56:194-206 '63.
(MIRA 16:6)

1. Institut geologii rudnykh mestorozhdeniy, mineralogii,
petrografii i geokhimii AN SSSR.
(Siberian Platform—Volcanic ash, tuff, etc.)

DMITRIYEV, Yu.I.

Volcanism of the Siberian Platform, fact or fiction? Izv. AN SSSR. Ser.geol. no.6:101-10? Je '64.   (MIRA 18:2)

1. Institut geologii rudnykh mestorozhdeniy, petrografii mineralogii i geokhimii AN SSSR, Moskva.

DMITRIYEV, Yu.I.

> The PKA- 110 unit for combining the impregnation and strengthening
> of heavy fabrics. Biul.tekh.-ekon.inform.Gos.nauch.-issl.inst.-
> nauch. i tekh.inform. no.6:57-59 '62.   (MIRA 15:7)
>
> (Textile machinery)

DMITRIYEV, Yu.L., inzh.; LYASHCHENKO, G.D., inzh.; MEL'NICHENKO, D.Ye., kand.
        tekhn.nauk

    Introduction of the new USKhA No.4 profile of a siphon spillway.
    Gidr.stroi. 31 no.4:23-26 Ap '61.   (MIRA 14:5)
                (Ukraine—Spillways)

L 31327-66   EWT(m)/EWP(t)/EWP(b)   IJP(c)   JD/JW/JG

ACC NR: AP5025796   SOURCE CODE: UR/0363/65/001/009/1582/15?7

AUTHOR: Zelikman, A. N.; Dmitriyev, Yu. M.; Khazan, A. Z.   /K/

ORG: Institute of Steels and Alloys (Institut stali i splavov)   ₂

TITLE: Kinetics and mechanism of sublimation of tungsten dioxydichloride
                                                            71

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 9,
1965, 1582-1587

TOPIC TAGS: tungsten compound, sublimation

ABSTRACT: The kinetics of sublimation of WO_2Cl_2 were studied at 350-
-5?0°C by continuous weighing in a stream of argon. It was shown that
the sublimation process consists of two consecutive stages: decomposi-
tion of WO_2Cl_2 in the solid phase with the formation of WO_3 and $WOCl_4$
and secondary reaction of $WOCl_4$ with WO_3 to form gaseous WO_2Cl_2. For
this reason, the sublimates contain a mixture of $WOCl_4$ and WO_2Cl_2 in
various proportions and the residue consists of WO_3. The sublimation
rate is determined by the decomposition of solid WO_2Cl_2 which is a sec-
ond-order topochemical reaction. The apparent activation energy is

UDC: 546.786'221'131   /4

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ACC NR: AP5025796

equal to 12.0 kcal/mol. In the 350-500°C range the maximum degree of sublimation is 85%. At 450-500°C, the sublimation rate is sufficiently high to be used for practical applications. Orig. art. has: 7 figures, 1 table, 6 formulas.

SUB CODE: 07/   SUBM DATE: 30Mar65/   ORIG REF: 008/   OTH REF: 000

Card 2/2

SHAPOVALOV, K.S.; DMITRIYEV, Yu.N., red.

[The KDUE-16 "Omichka" circular conveyor-type milking
system; recommendations for its assembly and operation]
Konveierno-kol'tsevaia doil'naia ustanovka KDUE-16
"Omichka"; rekomendatsii po montazhu i ekspluatatsii.
Moskva, Biuro tekhn. informatsii, 1963. 36 p.
                                          (MIRA 17:6)
1. Soyuzsel'khostekhnika, Vsesoyuznoye ob"yedineniye.

ACC NR: AP7005694   SOURCE CODE: UR/0413/67/000/002/0184/0184

INVENTOR: Dmitriyev, Ye. N.

ORG: None

TITLE: An instrument for plotting courses and solving other problems in tactical navigation.   Class 42, No. 78091

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1967, 184

TOPIC TAGS: ship navigation, navigation equipment, measuring instrument

ABSTRACT: This Author's Certificate introduces an instrument for plotting courses and solving other problems in tactical navigation. The device consists of two parallel rulers with a protractor, a nomogram consisting of lines of points for the function $S=Vt$ and scales for laying off starboard and port course angles. The instrument is designed so that either ruler may be moved in any direction parallel to itself and to the other ruler. The rulers are connected by means of two systems which are hinged to each other through levers. The hinges of these systems are interconnected by a lever parallel to both rulers.

SUB CODE: 13,17/SUBM DATE: 12Dec47

Card 1/1

DMITRIYEV, Yu.S.

Comparison of one-way and two-way alteration of conditioned reflexes for evaluation of the lability of nervous processes in rodents. Zhur. vys.nerv.deiat. 14 no.6:1100-1103 N-D '64.

(MIRA 18:6)

1. Pavlov Institute of Physiology, U.S.S.R. Academy of Sciences, Koltushi.

DMITRIYEV, Yu.S., insh.-podpolkovnik

The system for detecting and intercepting rockets. Vest.
Vozd.Fl. no.1:90-94 Ja '60.   (MIRA 13:8)
            (Rockets (Ordnance))
        (Ballistic missle early warning systems)

DMITRIYEV, Yu.V., kand. tekhn. nauk

Hollow prestressed elements of great length for floors.
Prom. stroi. 41 no.4:55-56, p.3 of cover Ap '64.

(MIRA 17:9)

DMITRIYEV, Yu.V.,inzh.

Studying the performance of prestressed continuously reinforced
sectional girders to be used for roofs of industrial buildings.
Trudy NIIZHB no.3:257-299 '58.   (MIRA 12:1)
             (Girders--Testing)

DMITRIYEV, Yu.V., Cand Tech Sci -- (diss) "Study of the
~~performance~~ and technology of manufacture of structural ~~(picture)~~
~~(Title)~~ pre-stressed girders of continuous reinforcing
elements for covering industrial buildings." Mos, 1959,
19 pp (Acad of Construction and Architecture. Sci Res Inst
of Concrete and Reinforced Concrete NIIZhB) 150 copies

(KL, 35-59, 114)

- 33 -

DMITRIYEV, Yu.V., inzh.

Conveyor for making prestressed reinforced products. Nov. tekh.
mont. i spets. rab. v stroi. 21 no.2:28-29 F '59.   (MIRA 12:1)
          (Conveying machinery) (Prestressed concrete)

DMITRIYEV, Yu.V., inzh.

Prestressing reinforced concrete panels. Prom. stroi. 37 no.11:55-57
N '59.   (MIRA 13:2)
            (Concrete slabs) (United States--Prestressed concrete)

BERDICHEVSKIY, G.I., kand.tekhn.nauk, DMITRIYEV, Yu.V., inzh.

Stress distribution near the cavities in webs of
prestressed reinforced concrete beams. Bet. i zhel.-bet.
no.2:90-95 F '60.   (MIRA 13:6)
        (Strains and stresses)   (Girders)

AVRAMENKO, V.N., inzh.; DMITRIYEV, Yu.V., kand.tekhn.nauk;. IVANOV, K.S.,
        inzh.

Special problems in the stand production of prestressed reinforced
concrete construction elements in English factories. Bet.i zhel.-
bet. no.12:570-572 D '60.   (MIRA 13:11)
                (Great Britain--Prestressed concrete)

33559

10.6300   1327

S/179/61/000/006/009/011
E032/E514

AUTHOR: Dmitriyev, Yu. V. (Leningrad)

TITLE: On free vibrations of prestressed cylindrical three-
layer sandwich shells

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye
tekhnicheskikh nauk. Mekhanika i mashinostroyeniye,
no.6, 1961. 155-158

TEXT: The author discusses free linear vibrations of a
hollow cylindrical three-layer sandwich shell subjected to all-
sided external pressure. Axial and tangential inertial forces
and the compressibility of the filler are taken into account.
It is pointed out that this was not done by A. P. Prusakov
(Ref.1: Izv.AN SSSR, OTN, Mekhanika i mashinostroyeniye, 1960,
No.1). The outer layers are assumed to be isotropic with equal
Poisson coefficients. The differential equations for the problem
are derived by a variational method for the case of a shell with
a rigid isotropic filler. The external pressure is replaced by
two stresses acting in the axial and tangential directions,
respectively, and the strains and stresses in the expressions for

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On free vibrations of ...

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the potential energy of each of the layers are expressed in terms of the displacements of the mean surfaces of the outer layers. The condition that the first variation of the force function must vanish is then introduced, leading to the complete set of differential equations for the problem. The equations so derived are then applied to the case of a closed circular shell with a rigid filler, neglecting the radial compressibility. A cubic equation is obtained for the frequency of the vibrations. The second case considered is that of the free vibrations of a shell with a light filler, neglecting the mass inertia in the u and v directions but allowing for the compressibility of the filler in the transverse direction. It is shown that the frequencies of natural vibrations of the shell and the critical loads in general depend on the form of the vibrations and the loss of stability (in distinction to the case of sandwich plates with compressible fillers for which this dependence does not exist). There are 3 Soviet-bloc references.

SUBMITTED: February 4, 1961

Card 2/2

DMITRIYEV, Yu.V., kand.tekhn.nauk

Sea mooring in Milford Haven. Transp. stroi. 11 no.5:55-56
My '61.   (MIRA 14:6)
          (Milford Haven, Wales--Habor--Anchorage)

DMITRIYEV, Yu.V., kand.tekhn.nauk

Mold production of hollow prestressed concrete beams. Avt. dor.
24 no.8:27-28 Ag '61.   (MIRA 14:9)
            (England—Prestressed concrete)
                (Beams and girders)

DMITRIYEV, Yu.V., kand.tekhn.nauk

Stamped metal forms used by British plants making reinforced con-
crete products. Bet. i zhel.-bet. 8 no.3:137-139 Mr '62.
(MIRA 15:3)

(Reinforced concrete)

DMITRIYEV, Yu. V., knad. tekhn. nauk

Prestressed concrete cross tie factory in England.
Transpstroi 13 no. 11:65-67 N '63.   (MIRA 17:5)

AVRAMENKO, V.N., inzh.; BAGOCHYUNAS, V.M., inzh.; DMITRIYEV, Yu.V., kand.
tekhn. nauk

Flat roofs for industrial buildings made of hollow decks of air
flues. Prom. stroi. 41 no.6:18-22 Je '64.   (MIRA 17:9)

DMITRIYEV, Yu.V.

Automatic welding in the Kovrov excavator factory. Stroi.i dor.
mashinostr. 2 no.3:30-33 Mr '57.

(Kovrov--Welding)

(MLRA 10:5)

DMITRIYEV, Iu.V., inzh.

Mechanization and automatization of welding in the manufacture of excavators. Svar. proizv. no.10:24-25 O '61.   (MIRA 14:9)

1. Kovrovskiy ekskavatornyy zavod.
(Electric welding—Equipment and supplies)
(Excavators—Welding)

1.2300   2408 1573   28982

S/135/61/000/011/002/007
A006/A101

AUTHORS: Dmitriyev, Yu. V., Engineer, Kolpashnikov, A. I., Candidate of
Technical Sciences, Fomin, A. P., Engineer

TITLE: Spot and roller welding of SAP (Sintered aluminum powder)

PERIODICAL: Svarochnoye proizvodstvo, no. 11, 1961, 7-10

TEXT: The most serious deficiency of sintered aluminum powders (SAP) is
their poor weldability which prevents the assimilation of this valuable material
in the industry. SAP-1 sheets, 1 - 1.5 mm thick containing 7.6 to 8.5% oxides,
do not melt when exposed for a short time to a temperature as high as 800 to
1,000°C; the oxide layer on the surface remains intact and prevents fusion.
Consequently, spot or seam welding under conventional conditions results in
adhesion rather than in fusion. Some improvement can be achieved by increasing
current and pressure and prolonging pulse duration, and also by inserting a
copper or brass foil between electrodes and sheets. The welds obtained have
satisfactory strength and a ring-shaped fusion zone. However the base metal
around the weld is softened and frequent expulsions of overheated metal are
caused. In 1960 the authors developed a technique for cladding SAP-1 sheets

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Spot and roller welding of SAP ...

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A006/A101

with aluminum, aluminum alloys, SAP type materials with low oxide content (up to 4%) and SAP-1 annealed at high temperatures. Cladding consisted in the preparation of blanks of basic and cladding material, mechanical cleaning of the contact surfaces, degreasing and rolling. Hot rolling was performed in several passes with 60 - 70% total reduction at 420 - 460°C. Subsequently the sheets were rolled at room temperature to a required thickness at 50 - 65% degree of cold deformation. During the cladding process the oxide film on the SAP blank is destroyed under the effect of high plastic deformations and is distributed between the base and cladding materials, thus creating conditions for their strong connection. Difficulties in producing a cast nugget in SAP sheets are eliminated, since this is not necessary when welding cladded material. This process, especially cladding with aluminum manganese alloys greatly improves the weldability of SAP-1 sheets, eliminates all the difficulties and produces reliable spot and seam welds with satisfactory reproducibility. With cladding it is also possible to weld SAP sheets to other aluminum alloy sheets. The weld strength at room temperatures and particularly at 350 and 500°C is much higher than can be expected from the cladding metal alone. Spot welds 6.1 to 6.2 mm in diameter on clad 1 mm thick SAP-1 sheets break under shearing loads of 313 to 357 kg at 20°C; 170 to 210 kg at 350°C, and 70 to 80 kg at 500°C. Tensile

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Spot and roller welding of SAP ...

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strength of SAP-1 at these temperatures is 31 to 37, 15 to 16, and 6 to 8 kg/mm^2 and elongation, 4 to 8, 3 to 5, and 2.5 to 3% respectively. The high strength of clad SAP welds may possibly be explained by the diffusion of the strengthening phase of SAP to the cladding, during rolling or welding. There are 6 figures, 4 tables and 2 Soviet-bloc references.

ASSOCIATION: MATI (The Moscow Aviation Technological Institute)

Card 3/3

I.2300   2408

25936
S/136/61/000/008/004/005
E193/E135

AUTHORS: Orlov, B.D., Kolpashnikov, A.I., and Dmitriyev, Yu.V.

TITLE: Spot welding of duralumin clad with alloys of the
             aluminium-magnesium system

PERIODICAL: Tsvetnyye metally, 1961, No.8,   pp. 66-72

TEXT: The most dangerous defect of joints made by spot
welding consists in incomplete fusion of the metal, resulting in
the reduction of the effective area of the joint. In the case of
welding of clad metals this defect is due to the fact that the
mating cladding layers remain solid although the adjacent base
material melts during the welding cycle. A microsection through a
faulty spot weld of this type, reproduced in the paper, shows that
no bond is formed between the two cladding layers. A certain
degree of mechanical keying takes place but the joint has
practically no load-carrying capacity. A more frequent type of
failure of this kind is that in which only a portion of the
cladding layer near the periphery of the welded spot remains
unmolten. A photograph of a section through such a welded joint is
reproduced, showing the actual and the nominal diameters of the
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Spot welding of duralumin clad with ...   S/136/61/000/008/004/005
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weld nugget. The unfused and unbonded cladded layers, extending in to the weld nugget, constitute an "undercut", the degree of under- cutting being given by

$$\Delta = \frac{d_{nominal} - d_{actual}}{d_{nominal}} \cdot 100\%$$

The defect, described above, occurs most frequently in spot welding of relatively thick (thicker than 2 + 2mm) clad duralumin sheet. If, however, the current density during the welding cycle falls appreciatively, faulty joints may be also produced in thin materials. Faulty joints of this type are particularly dangerous because, in contrast to similar faults found in spot-welded unclad metals, they cannot be detected by non-destructive tests. The object of the present investigation was to find means of preventing the formation of the defects of this type, or at least reducing the degree of undercutting in faulty joints. Regarding the relevant properties of aluminium-clad duralumin, it will be seen that the melting range of the duralumin Д16АТ (D16AT) core is 502-638 °C, its electrical resistivity 0.073 ohm mm²/m, and its thermal conductivity 0.29 cal/cm sec °C; the corresponding figures

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Spot welding of duralumin clad with ...

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for aluminium (the cladding material) being 658 °C,
0.0269 ohm mm^2/m, and 0.052 cal/cm sec °C. The manner in which
these two materials differ regarding these properties is bound to
render aluminium-clad duralumin susceptible to the welding
failures under consideration. It was, therefore, decided to replace
the aluminium cladding by other corrosion resistant material with
better electrical and thermal properties, and the АМГ (AMG) alloy
consisting (in wt.%) of 2.0-2.8 Mg, 0.15-0.4 Mn, remainder
aluminium (with no more than 0.4 Si, 0.1 Cr, 0.1 other impurities)
was used for this purpose. The melting range of this alloy is
627-652 °C, its electrical resistivity 0.0476 ohm mm^2/m, and its
thermal conductivity 0.37 cal/cm sec °C. (A schematic description
of the method of fabrication of AMG-clad duralumin sheet is given
in the paper). The improvement brought about by adopting this
measure was demonstrated by a series of experiments, the results of
which are reproduced graphically. The welding conditions during
the preparation of the first series of test pieces are given in
Table 3.   The results of the first series of experiments are
shown in Fig.4, where the degree of undercut Δ (%) of spot-welded
joints is plotted against the duration of the current pulse, the
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four curves relating to results obtained on: 1) 4 + 4 mm thick sheet of AMG-clad duralumin; 2) 4 + 4 mm thick sheet of Al-clad duralumin; 3) 2 + 2 mm thick sheet of AMG-clad duralumin; and 4) 2 + 2 mm thick sheet of Al-clad duralumin. The results of some other experiments are reproduced in Fig.6, where Δ (%) is plotted against the welding pressure (kg) applied in welding of clad sheet 4 + 4 mm thick, curves 1-3 relating to AMG-clad duralumin and curves 4-6 to Al-clad duralumin. Curves 1 and 4, 2 and 5, and 3 and 6, were constructed from data on welds produced, respectively, by 'soft', 'medium' and 'hard' welding schedules. [Abstractor's note: No explicit explanation of these terms is given in the paper, but they seem to indicate the duration of the current pulse, 'soft' schedule corresponding to short pulses]. Finally, the effect of various factors on strength of spot-welded joints is illustrated in Fig.7, where the average force (P_{cp}, kg) required to shear the joint is plotted against the duration of the current pulse (secs). The four curves relate to: 1) 4 + 4 mm thick AMG-clad duralumin; 2) 4 + 4 mm thick Al-clad duralumin; 3) 2 + 2 mm thick AMG-clad duralumin; and 4) 2 + 2 mm thick Al-clad duralumin. The results obtained prove conclusively
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Spot welding of duralumin clad with ...

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that whereas it is not possible to avoid the formation of undercut in spot-welded Al-clad duralumin, this difficulty can be overcome by replacing the aluminium cladding by the AMG alloy. Consistently good joints in AMG-clad duralumin can be obtained by spot-welding, the mechanical strength of welds in this material being 20-30% higher than that of equally large spot-welds in Al-clad duralumin.

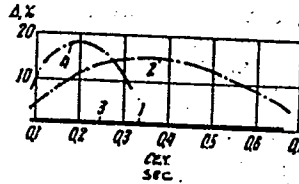There are 7 figures, 3 tables and 2 Soviet references.

Fig.4

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DMITRIYEV, Yu.V., inzh.

Improving the resistance spot welding of D16 alloy sheets by
cladding with an AMg alloy. Trudy MATI no.57:91-94 '63.
(MIRA 16:12)

KOLPASHNIKOV, A.I., kand. tekhn. nauk; DMITRIYEV, Yu.V., inzh.;
    SHLENSKIY, G.N., inzh.

Cladding of SAP [sintered aluminum powder]. Trudy MATI
no.57:99-103 '63.   (MIRA 16:12)

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Strength of clad sheet SAP [sintered aluminum powder].
Trudy MATI no.57:110-113 '63.   (MIRA 16:12)