KRESHKOV, A.P.; MYSHLYAYEVA, L.V.; KUCHKAREV, Ye.A.; SHATUNOVA, T.G.

Quantitative determination of titanium in organotitanium and
organosilicotetanium compounds. Zhur. anal. khim. 20 no.12:
1325-1329 '65.   (MIRA 18:12)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I.
Mendeleyeva. Submitted November 28, 1964.

ACCESSION NR: AP4043302   S/0032/64/030/008/0944/0944

AUTHOR: My*shlyayeva, L. V.; Krasnoshchekov, V. V.; Shatunova, T.G.;
Sedova, I. V.

TITLE: Determination of iron in ferrocene and its organosilicon
derivatives

SOURCE: Zavodskaya laboratoriya, v. 30, no. 8, 1964, 944

TOPIC TAGS: iron determination, ferrocene, ferrocene organosilicon
derivative

ABSTRACT: A new rapid method for the quantitative determination of
iron in ferrocene and ferrocene organosilicon derivatives was
developed at the Moscow Chemical Technology Institute imeni D. I.
Mendeleyev. The method is based on decomposition of the sample with
a mixture of hydrochloric acid and ammonium persulfate followed by
iodometric or complexometric determination of Fe^{3+}. The method is
claimed to be satisfactorily accurate and reproducible and consid-
erably to exceed other methods in the rapidity of sample decomposition.

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ACCESSION NR: AP4043302

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im.
D. I. Mendeleyeva (Moscow Chemical Technology Institute)

SUBMITTED: 00   ATD PRESS: 3084   ENCL: 00

SUB CODE: GC   NO REF SOV: 000   OTHER: 000

Card 2/2

L. 34155-66   EWP(m)/EWP(j)/EWP(t)/ETI   IJP(c)   JD/RM

ACC NR: AP6014141 *(A)*   SOURCE CODE: UR/0075/65/020/012/1325/1329

AUTHOR: Kreshkov, A. P.; Myshlyayeva, L. V.; Kuchkarev, Ye. A.;
Shatunova, T. G.

ORG: Moscow Chemico-technological Institute im. D. I. Mendeleyev
(Moscovskiy khimiko-tekhnologicheskiy institut)

TITLE: Quantitative determination of titanium in titanium-organic and
titanium-silicon-organic compounds

ABSTRACT: The article describes two methods for the determination of
titanium, a titration (complexometric) and a spectroscopic method. In
the titration method, a weighed portion of the compound to be analyzed,
containing 10-15 mg of titanium, is introduced into 5-7 ml of
concentrated sulfuric acid. The mixture is heated for 10-15 minutes up
to the evolution of H_2SO_4 vapors. The solution is cooled to 90-100° and
complete mineralization of the weighed portion is carried out with
ammonium persulfate. The solution is cooled and 30 ml of water are

Card 1/2   UDC: 543.70:543.80

ACC NR: AP6014141

carefully added and the solution is boiled for 5-10 min to decompose the
ammonium persulfate. The silicic acid is filtered off and the silicon
is determined by weighing in the form of SiO_2. Final titration of the
titanium in the filtrate is done with a 0.05 M solution of $ZnSO_4$. The
relative error of the method does not exceed 2.5%. In the spectroscopic
method, the titanium is determined in the form of tetrabutoxytitanium
and silicon in the form of tetraoxysilane. In this method, the standard
relative error in the determination is 2.2% for titanium and 4% for
silicon. Comparative results by the two methods are shown in tabular
form. According to the article, the spectroscopic method is to be
preferred in practice, since no preliminary mineralization is required.
Orig. art. has: 2 figures and 2 tables.

SUB CODE: 07/ SUBM DATE: 28Nov64/ ORIG REF: 010/ OTH REF: 002

Card 2/2

SHATUNOVA, T.V.
KOVARSKAYA, M.I.; SHATUNOVA, T.V.; VANCHENKO, A.S.

Scientific and applied conference of the Leningrad teachers of che-
mistry. Khim.v shkole 9 no.5:78-79 S-O '54.   (MLRA 7:9)
   (Chemistry--Study and teaching)

L 29722-66   SWP(j)/EWT(m)   RM/WW

ACC NR: AP6019449   SOURCE CODE: UR/0303/66/000/003/0060/0062

AUTHOR: Kreshkov, A. P.; Shatunova, T. G.; Myshlyayeva, L. V.; Kuchkarev, Ye. A.

ORG: none

TITLE: Accelerated methods for determining aluminum and silicon in organic compounds containing aluminum and silicon

SOURCE: Lakokrasochnyye materialy i ikh primeneniye, no. 3, 1966, 60-62

TOPIC TAGS: heteroorganic compound, aluminum determination, silicon determination, TITRIMETRY, ALUMINUM COMPOUND, SILICON COMPOUND, CHEMICAL DETECTION, SPARK IGNITION

ABSTRACT: Current methods for determining Al and Si in Al- and Si-containing organic compounds (ASOC) require complete mineralization of such compounds and are time-consuming. The authors have developed two accelerated methods for determining these elements in ASOC. The first method is the determination of aluminum by titration involving complex ion formation. The $>Si—O<Al$ bond is hydrolyzed with a 2N aqueous solution of HCL in acetone or methanol medium. The $>Si—C<$ bond is not affected under these conditions. The organic solvents contribute to the fast hydrolysis by readily dissolving and stabilizing the hydrolysis products. Titration is conducted in aqueous-methanol or aqueous-acetone solutions. The titrant is zinc sulfate; the indicator is Xylenol Orange or dithizone. The second method is spectroscopic for simultaneous determination of aluminum and silicon involving spraying of ASOC cumene solutions into a low-power spark discharge. The two methods were verified with ASOC

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L 29728-66

ACC NR: AP6019449

of known composition.   Both methods give reproducible results which are in general agreement with those of the gravimetric method. Accuracy of the first method is from -1.50 to +0.91%; accuracy of the second method is: for Al, from -2.98 to +3.15%; for Si, from -4.8 to +3.8%. The procedures are described in the source. Orig. art. has: [BO]
1 figure and 2 tables.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 008/ ATD PRESS: 5 0 / 3

Card   2/2

SMIRNOV, A.D., dotsent; SHATUNOVA, T.V.

Planned chemistry program requires a serious review. Khim.v
shkole 15 no.1:51-54 Ja-F '60.   (MIRA 13:5)

1. Zav. kafedroy metodiki prepodavaniya khimii Leningradskogo
pedagogicheskogo instituta imeni Gertsena (for Smirnov). 2. Zav.
kafedroy khimii Leningradskogo gorodskogo instituta usover-
shenstvovaniya uchiteley (for Shatunova).
               (Chemistry--Study and teaching)

SHATUNOVA, Ye.o.

Wor: of P.A. Sulima on the foundations of mathematical analysis.
Ist.-mat. issl. no.12:179-134 '59.   (MIRA 13:11)
        (Mathematical analysis) (Sulima, P.A.)

SHATUNOVSKAYA, N. S.

Distribution of 3,4-benzopyrene in the cells of salivary glands of Chironomus larvae. V. M. Bergol'ts and N. S. Shatunovskaya. Byull. Eksptl. Biol. Med. 24, 241-3 (1947).—The specimens were examd. by ultraviolet fluorescence microscopically after immersion (10-30 min.) in petrolatum soln. of 0.5% 3,4-benzopyrene; they were then wiped, washed with water, and suspended in water; later expts. used 1-5-min. immersion to reduce mortality. Specimens which were examd. up to 1.5 hrs. after immersion showed sharp fluorescence in the stomach but none in the salivary glands. After that period the glands become infiltrated and fluorescence can be readily seen after 2 hrs. with the entire protoplasm of the cells showing this effect. After 2 days the fluorescence persists and includes even the intercellular spaces; nuclei and chromosomes remain dark and do not participate. The fluorescence slowly dies out and after 17 days persists in rings around the nuclear substances and on the external surface of the glands; this persisted for 40 days. G. M. K.

SHATUNOVSKAYA, Ye.G, starshiy nauchnyy sotrudnik.

Scientific-practical conference of physicians held in Kovrov.
Ortop.travm. i protez. no.4:84-85 Jl-Ag '55 (MLRA 8:10)
(TRAUMATISM)

ALEKSEYEV, A.Ye.; VORONTSOV, D.V.; LEONT'YEVA, A.A.; TELESHEVA, N.I.;
    SHATUNOVSKAYA, Ye.G.

    Problem of the permeability (resorption) of the capillaries in
    transplanted skin under experimental and clinical conditions.
    Ortop.,travm.i protez. 20 no.11:36-42 N '59.   (MIRA 13:4)

    1. Iz Gor'kovskogo nauchno-issledovatel'skogo instituta travmatologii
    i ortopedii (direktor - dotsent M.G. Grigor'yev).
            (SKIN TRANSPLANTATION exper.)
            (CAPILLARY PERMEABILITY)

SHATUNOVSKAYA, Ye.G., starshiy nauchnyy sotrudnik

Treatment of sequelae in burns. (Review of foreign literature).
Ortop., travm.i protez.   no.7:68-74 '61.   (MIRA 14:8)

1. Iz Gor'kovskogo nauchno-issledovatel'skogo instituta travma-
tologii i ortopedii (dir. - dotsent M.G. Grigor'yev).
                    (BURNS AND SCALDS)

SHATUNOVSKIY, A.Z. (Khar'kov)

Practice in the mechanization of technological processes
and in modernizing equipment. Shvein.prom. no.1:19-20
Ja-F '60. (MIRA 13:6)
(Kharkov--Clothing industry)

SHATUNOVSKIY, G.M., kandidat tekhnicheskikh nauk.

Labor expended in manufacturing cast machinery parts and stocks.
Sel'khozmashina no.12:25-29 D '56.   (MLRA 10:2)

(Agricultural machinery industry)
(Founding)

GUROV, I.N., dotsent, kand.tekhn.nauk, red.; SMIRNOV, N.I., dotsent, kand.
tekhn.nauk, red.; SHATUNOVSKIY, G.M., dotsent, kand.tekhn.nauk, red.;
SHTAIKO, M.G., dotsent, red.; UVAROVA, A.F., tekhn.red.

[Design and manufacture of agricultural machinery; collected
articles from the Second All-Union Scientific-technological
Conference in Rostov-on-Don] Konstruirovanie i proizvodstvo
sel'skokhoziaistvennykh mashin; sbornik statei po materialam
Vtoroi Vsesoiuznoi nauchno-tekhnicheskoi konferentsii, sostoiav-
sheisia v Rostove-na-Donu. Pod red. I.N.Gurova i dr. Moskva,
Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 326 p.
(MIRA 12:11)

1. RISM (for Shatunovskiy).
               (Agricultural machinery)

SHATUNOVSKIY, Grigoriy Mikhaylovich, kand.tekhn.nauk; KORCHAGIN, P.A.,
    inzh., retsenzent; VORONIN, B.G., inzh., red.; IVENSKAYA, N.D.,
    red.izd-va; CHERNOVA, Z.I., tekhn.red.

    [Engineering efficiency of the structures of agricultural
    machinery] Tekhnologichnost' konstruktsii sel'skokhoziaistvennykh
    mashin. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry,
    1960. 367 p.   (MIRA 13:6)
            (Agricultural machinery)

SHATULOVSKIY, Grigoriy Mikhaylovich, kand. tekhn. nauk; IVANOV, I.S.,
inzh., red.; ZHURAVLEVA, M.N., red.izd-va; CHERNOVA, Z.I.,
tekhn. red.; EL'KIND, V.D., tekhn.red.

[Engineering efficiency and economical effectiveness of
agricultural machines]Tekhnologichnost' konstruktsii i eko-
nomicheskaia effektivnost' sel'skokhoziaistvennykh mashin.
Izd.2., perer. Moskva, Mashgiz, 1962. 443 p.
                                        (MIRA 15:11)
            (Agricultural machinery)

SOV/68-59-1-7/26

AUTHORS: Savarts, S.A., Shatunovskiy, I.O. and Onopriyenko, V.P.

TITLE.   The Evaluation of the Physico-mechanical Properties of
Coke (Otsenka fiziko-mekhanicheskikh svoystv koksa)

PERIODICAL: Koks i Khimiya, 1959, Nr 1, pp 24 - 33 (USSR)

ABSTRACT: Various methods of determining the physico-mechanical
properties and quality indices of coke and their
correlation with the operation of blast furnaces were
investigated. The object of the investigation was to
submit samples of coke to parallel tests at a low and a
high degree of degradation and to find out which
corresponds more closely to the degree of degradation
of coke in a blast furnace and which of the indices of
physico-mechanical properties of coke is more closely
related with the operational indices of blast-furnace oper-
ation. All tests were done on 50 kg samples. The tests
were performed in a drum 1 m in diameter and 0.4 m long,
rotating at 15 rpm. The results obtained with this drum
after 150 revolutions corresponded to the standard
Russian test in a large drum. The different degree of
degradation was obtained by parallel tests at 150, 225
and 300 revolutions of the drum. Composite sample
(proportional to the size distribution of coke) and single

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The Evaluation of the Physico mechanical Properties of Coke

size fraction (80-60 mm) of coke were tested. The
following indices of coke quality were calculated:
a) the amount left in the drum and the content of
-10 mm fraction, according to the USSR standard;
b) gas permeability index according to Syskov for samples
which passed the test at 150, 225 and 300 revolutions;
c) indices of uniformity and mean size of coke after
testing at a low and a high degree of degradation of
composite coke samples and samples of 80-60 mm coke
fractions (at 150, 225 and 300 revolutions of the drum);
d) strength indices calculating according to Graf
(Stahl u. Eisen, 1956, Nr 3, p 153) from tests at 150,
225 and 300 revolutions of the drum: and e) aerodynamic
index — "surface area of degradation" for composite
samples tested at 225 revolutions of the drum. The
investigation was carried out at the Krivoy Rog Iron
and Steel Works. Coke from one battery was studied.
During the investigation (three months), the components
of the coal blend remained constant. The composition
of the blend during the first period of the investigation
was %. G - 14, Zh - 47, K - 21, OS - 18 and during the

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SOV/__-__9-1-_/26

The Evaluation of the Physico-mechanical Properties of Coke

second period %. G - 11, Zn - 47, K - 24 and CS - 13.
The coking period was often varied within limits of 15.5
to 18.5 hours. The temperature conditions followed these
changes but their establishment usually required some time.
Thus the main factor, determining changes in the mechanical
properties of coke were thermal conditions of coking. The
majority of indices reacted to these changes (Figures 1
and 2). Sampling and testing were carried out every four
hours. Altogether 400 samples were tested. Statistical
correlations between coke quality indices and coking
period were carried out. Correlation coefficients and
regression equations are shown in Table 1. All the indices
of the coke quality with the exception of the amount
left in the drum (standard test) correlated significantly
with the coking period. Low correlation coefficients for
gas-permeability indices for samples tested under conditions
of a high degree of degradation indicated that this method
of calculating this index is not applicable for such
testing (high number of revolutions of the drum). The
influence of the coking period on the size distribution of
coke was also confirmed using data for the whole year

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SOV/en-59-1-7/26

The Evaluation of the Physico-mechanical Properties of Coke

(Figure 3). In order to establish which index of coke quality reflects its metallurgical properties, it was necessary to compare them with some indices of blast-furnace operation. It was considered that the most suitable index of furnace operation would be the tempera-ture of the peripheral gases which well reflects the distribution of the gas stream on the periphery, independently of the causes determining this distribution. As for each furnace operating under a given set of conditions, there is an optimum distribution of gas flow which can be characterised by so small differences between extremes of temperatures in the measuring points that can be considered as an "ideal". If such "ideal" difference divided by the actual difference prevailing in a given moment or by a mean actual difference for a given time interval, then the ratio obtained could be used as a quantitative index - coefficient of the uniformity of the gas stream K . The higher this coefficient, the more uniform is the gas stream distributed along the periphery of the furnace. It should be pointed out that this coefficient does not take into consideration deflection

Card4/8   of the gas stream from the periphery towards the centre of

S/V/cc-59-1-7/26

The Evaluation of the Physico-mechanical Properties of Coke

the furnace and vice versa. For the purpose of these
investigations, the "ideal" difference in the temperature
differences along the periphery was taken as 25 °C
and coefficient K calculated for 15-minute intervals, from
which mean values for 4-hour periods were used for the
statistical correlation. The correlation of other furnace
operating factors such as hot blast pressure, pressure drop
across the furnace, CO_2 content in peripheral gases and

the distribution of CO_2 along the throat radius, the

nature of spread of temperature indicated by thermocouples
in the gas off takes and the diagram of stock descent
with the coke quality indices were also tried. It was
assessed for the purpose of correlation that the time
interval between the coke leaving the coke ovens, its
arrival at the furnace bunker and its descent to some
depth in the furnace stack (when its influence on furnace
operation becomes noticeable) amounts to 8 hours. From
the periods of investigation of the coke quality, /1 and 2
were chosen for comparison with furnace operation as during
these periods most distinct differences in the coke properties
and considerable variations in these properties.

Card5/8   were obtained (Table 2)   The relevant data

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characterising coke quality, operating conditions and operating indices of the blast furnace are given in Tables 2-4. The quality of sinter and the main parameters of the furnace operation during these periods were practically constant. The highest correlation coefficient was obtained for indices of the size distribution of metallurgical coke ($r = 0.45 - 0.57$) and size distribution after testing at a low degree of degradation ($r = 0.51 - 0.54$) 95% significance level $r = 0.32$. Less pronounced correlation was obtained with the mechanical strength of coke obtained at a high degree of degradation ($r = 0.33 - 0.39$). This indicates that in a blast furnace, the degree of degradation of coke is comparatively low. From correlation coefficients for the individual size fractions, the highest was obtained for the fraction 40-25 mm ($r = -0.57$) which indicates a substantial negative influence of small coke fraction on the furnace operation. High correlation coefficients were also obtained for 60-60 mm fraction ($r = 0.46$) and the ratio of >60/(40-25) ($r = 0.43$). Correlation coefficients between K and all indices of coke strength obtained on testing at a low degree of degradation were

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The Evaluation of the Physico-mechanical Properties of Coke

of the same order. Therefore, the choice of the best
coke quality index should be based on its degree of
correlation with technological factors of coke production.
For these reasons, the index calculated according to Graf
is preferable. As one of the objectives of this work was
to determine the simplest possible method of testing from
the results obtained, the following can be concluded:
the weight of the sample of 50 kg made from a single-size
fraction (90-60 mm), rotated at 25 rpm for 100-150
revolutions appears to be sufficient. The comparison of
results obtained on parallel tests of samples made of
single and composite size fraction is shown in Figures 4
and 5. As an index of coke quality, the following ratio
is proposed:

$$\frac{\%\,(>60)}{\%\,(40-25)+\%\,(<10)}$$

which is similar but more sensitive than that proposed
by Graf (Figure 6).

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The Evaluation of the Physico-mechanical Properties of Coke

There are 6 figures, 4 tables and 4 references, 3 of which are Soviet and 1 German.

ASSOCIATIONS: UKhIN and Ukrainskiy institut metallov (Ukrainian Institute of Metals)

Card 3/8

BERIN, Aleksandr L'vovich; SHATUNOVSKIY, I.O., otv.red.; LIBERMAN, S.S.,
        red.izd-va; ANDREYEV, S.P., tekhn.red.

    [Operator of a casting machine; manual for the individual training
    of workers of brigades in industry] Mashinist razlivochnoi mashiny;
    uchebnik dlia individual'no-brigadnogo obucheniia rabochikh na pro-
    izvodstve. Khar'kov, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi
    i tsvetnoi metallurgii, 1960. 174 p.   (MIRA 13:9)
        (Blast furnaces--Equipment and supplies)
            (Foundries--Equipment and supplies)

VENZHEGA, Ivan Ivanovich; SHATUNOVSKIY, L.Ya., otv.red.; BELINA, R.A.,
     red.izd-va; ANDREYEV, S.P., tekhn.red.

     [Pipe fitter for blast furnace water lines; manual for the
     training of qualified workers in industry] Slesar'-vodoprovodchik
     domennoi pechi; uchebnoe posobie dlia podgotovki kvalifitsirovannykh
     rabochikh na proizvodstve. Khar'kov, Gos.nauchno-tekhn.izd-vo lit-ry
     po chernoi i tsvetnoi metallurgii, 1960. 199 p.
                                             (MIRA 14:1)
       (Blast furnaces--Equipment and supplies)   (Pipe fitting)

SHATUNOVSKIY, M.I.

Some characteristics of the feeding of young Baltic herring in
the Gulf of Riga. Nauch. dokl. vys. shkoly; biol. nauki
no. 1:33-36 '61. (MIRA 14:2)

1. Rekomendovana kafedroy ikhtiologii Moskovskogo gosudarstvennogo
universiteta im. M.V. Lomonosova.
(RIGA, GULF OF—HERRING) (FISHES—FOOD)

SHATUNOVSKIY, M.I.

Occurrence of a hybrid of the sea flatfish Platessa platessa (L.)
and the river flatfish Pleuronectes flesus L. in the eastern
part of the Baltic Sea. Vop.ikht. 3 no.1:184-186 '63.

(MIRA 16:2)

1. Kafedra ikhtiologii Moskovskogo gosudarstvennogo universiteta
imeni M.V.Lomonosova.
                    (Baltic Sea--Flatfishes)

SHATUNOVSKIY, M.I.

Some characteristics of fat and water metabolism in the river
flounder Pleuronectes flesus bogdanovi Sandeb. in the Kandalaksha
Bay of the White Sea. Zool. zhur. 42 no.6:870-876 '63.
(MIRA 16:7)

1. Kafedra ikhtiologii Moskovskogo gosudarstvennogo universiteta.
(Kandalaksha Bay—Flounders)
(Fishes—Physiology)

SHATUNOVSKIY, M.I.

Some characteristics of the fecundity dynamics of two populations of
the river flounder ((Pleuronectes flesus L.). Nauch. dokl. vys.
shkoly; biol. nauki no.1:27-30 '64.   (MIRA 17:4)

1. Rekomendovana kafedroy ikhtiologii Moskovskogo gosudarstvennogo
universiteta im. M.V.Lomonosova.

SHATUNOVSKIY, M.I.

Materials on the classification of the river flounder Pleuronectes
flesus L. of the White Sea. Vest. Mosk.un.Ser.6: Biol., pochv. 19
no.1:32-38 Ja-F '64.   (MIRA 17:4)

1. Kafedra ikhtiologii Moskovskogo universiteta.

KIFER, I.I.; TSEPLYAYEVA, M.S.; SHATUNOVSKIY, V.L.

Electrical equilibration of ferromagnetic probes for magnetic
flaw detection. Zav.lab. 28 no.1:105-107 '62.
                                              (MIRA 15:2)

1. Moskovskiy energeticheskiy institut.
                    (Magnetic testing)

TSEPLYAYEVA, M.S.; SHATUNOVSKIY, V.L.

Design of magnetic modulation transducers. Trudy MEI no.49:
85-95 '63.   (MIRA 17:3)

ACC NR: AP6011265   SOURCE CODE: UR/0413/66/000/006/0109/0109

AUTHORS: Gurvich, Yu. A.; Shatunovskiy, V. R.; Beskopyl'nyy, N. N.; Glad'ko, L. Ya.; Sokol, S. I.; Lyashenko, A. A.

ORG: none

TITLE: Four-pivot Cardan transmission. Class 47, No. 180023

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 109

TOPIC TAGS: mechanical power transmission device, motion mechanics

ABSTRACT: This Author Certificate presents a four-pivot Cardan transmission consisting of rollers and hinges. To produce a uniform revolution of a given machine shaft at any angle of the Cardan bend, the transmission is placed in three rigid casings (see Fig. 1). These casings are hinged to one another, and the two outside casings are rigidly connected to circular ratchet sectors in mesh. These sectors move the hinges through equal angles while the machine is working. To compensate for the excessive length of the rollers as compared with the length of the casings while the transmission undergoes bending, the roller in the middle casing is made to carry a bearing coil with prongs which enter the guides of the casings.

Card 1/2   UDC: 621.83:621.825.6
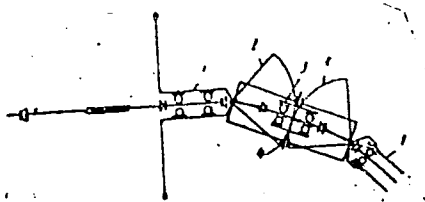
ACC NR: AP6011265

Fig. 1. 1 - rigid casings; 2 -
toothed sectors; 3 - coil; 4 - guides

Orig. art. has: 1 figure.

SUB CODE: 13/ SUBM DATE: 10Apr64

Card 2/2

ACCESSION NR: AT4043154   S/2531/64/000/154/0020/0029

AUTHOR: Gushchin, G. P., Shatunoy, I. A.

TITLE: Atmospheric ozone and jet streams

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy*, no. 154.
Voprosy* fiziki atmosfery* (Problems in atmospheric physics), 20-29

TOPIC TAGS: meteorology, ozone, atmospheric physics, troposphere, stratosphere,
aircraft turbulence, jet stream

ABSTRACT: Since the mass concentration of ozone increases sharply with height up to
30-40 km, it is natural to expect that the high turbulence in the jet stream zone leads to
a change in both the vertical distribution and the total ozone content in this zone in com-
parison with the quiet atmosphere. The authors have investigated the relationship between
the total content and vertical distribution of ozone and the position of the jet stream axis
(subtropical and extratropical jet stream at the 300-100 mb levels). The form of the mean
ozone profile in the jet stream zone is relatively independent of season and wind direction.
In jet stream zones there is a high horizontal gradient of the total ozone content.

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Specifically, on the left (cyclonic) side of a jet stream there is a maximum total ozone content not coinciding with the axis of the jet stream. On the anticyclonic periphery of the jet stream zone there is sometimes a minimum total ozone content. A minimum of the total ozone content is also noted on the cyclonic periphery near the jet stream zone. On the whole, the total ozone content is high in the jet stream zone. The jet stream ozone profile was also investigated using 1958 data for 37 stations in the northern hemisphere. The position of the jet stream axes was determined from pressure pattern charts for the 200-mb surface. The seasonal and latitudinal variation of ozone was excluded by using the deviations of the total ozone content from the mean monthly values. A total of 2,613 cases of ozone deviations was analyzed, and mean relative ozone profiles were obtained for winter, spring, summer, autumn and the whole year, as shown in Fig. 1 of the Enclosure. The number of cases for each season and for the whole year is indicated on the curves. Seasonal change exerts no appreciable influence on the general character of the ozone profile in jet streams. It is shown that the value of ozone density can be used successfully for determination of the position of zones of aircraft turbulence. The high total content of ozone in jet stream zones whould be reflected in the mean meridional

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ACCESSION NR: AT4043154

distribution of ozone and this actually is observed, as demonstrated on the basis of data from 10,000 observations. It is concluded that jet streams in the atmosphere facilitate the penetration of ozone from the mesosphere and upper stratosphere into the lower stratosphere and troposphere. The most probable mechanism of such ozone movement is atmospheric turbulence in a vertical direction. The probable loss of ozone at heights of 20-25 km as a result of its turbulent downward flux is compensated (fully or partially) by an ozone flux from greater heights (25-35 km) where photochemical equilibrium is established rapidly. Ozone data are therefore a valuable characteristic of the turbulent state of the lower stratosphere and upper troposphere. Orig. art. has: 5 figures and 3 tables.

ASSOCIATION: Glavnaya geofizicheskaya observatoriya, Leningrad (Main Geophysical Observatory)

SUBMITTED: 00

SUB CODE: ES

NO REF SOV: 012
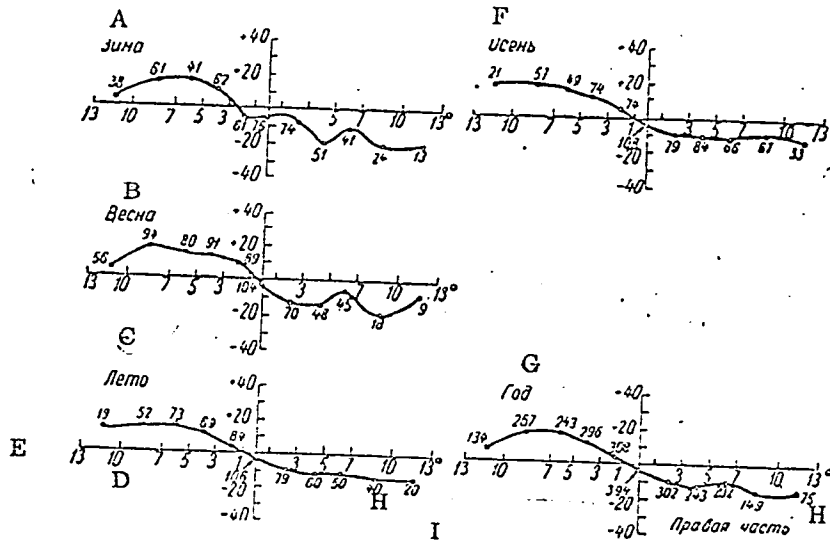
ENCL: 01

OTHER: 008

Card 3/4

Fig. 1. Mean deviations of total ozone content in the jet stream zone in different seasons and for the year. A - winter; B - spring; C - summer; D - left part; E - deviation of total ozone content, 10^{-3} cm; F - autumn; G - year; H - right part; I - Distance from jet stream axis, in degrees

Card 4/4

ZHAK, S.V., kand. fiz.-matem. nauk; SHATUNOVSKIY, G.M., kand. tekhn. nauk

Approximate determination of optimum values for technical and
economic calculations. Vest. mashinostr. 44 no.6:78-82 Je '64.
(MIRA 17:8)

DAVYDOV, A.S., polkovnik; KORSHUNOV, V.N., polkovnik; KOZLOV,
        M.D., podpolkovnik; LUKANIN, Ye.A., polkovnik; NESIN,
        A.A., polkovnik; POZMOGOV, A.S., polkovnik; PUTINTSEV,
        A.I., podpolkovnik; SIDORENKOV, P.I., polkovnik; SYTOV,
        L.G., polkovnik; FEDIN, G.R., polkovnik; CHEREDNICHENKO,
        V.T., polkovnik; CHERNYSHEV, F.I., kontr-admiral zapasa;
        SHATURNYY, A.N., polkovnik; ROMANOV, I.M., red.

        [Methodological materials for political instruction] Me-
        todicheskie materialy k politicheskim zaniatiiam. Mo-
        skva, Voenizdat, 1965. 240 p.   (MIRA 18:7)

        1. Russia (1923- U.S.S.R.) Glavnoye politicheskoye upravle-
        niye Sovetskoy Armii i Voyenno-Morskogo Flota. Upravleniye
        propagandy i agitatsii.

L 27771-66   EWP(j)/EWT(m)   RM

ACC NR: AP6018502   SOURCE CODE: UR/0079/65/035/011/1984/1988

AUTHOR: Fedorova, G. K.; Shaturskiy, Ya. P.; Kirsanov, A. V.   36

ORG: Institute of Organic Chemistry, AN UkrSSR (Institut organicheskoy khimii   B
AN UkrSSR)

TITLE: Derivatives of styryl-2-chlorostyrylphosphinic and bis-phenylacetylenyl-
phosphinic acids

SOURCE: Zhurnal obshchey khimii, vo. 35, no. 11, 1965, 1984-1988

TOPIC TAGS: phosphorylation, ester, phenol, amine, chlorinated organic
compound, organic phosphorus compound, hydrolysis, nonmetallic organic derivative

ABSTRACT: Phenylacetylene is phosphorylated by styryltetrachlorophosphorus,
forming styryl-2-chlorostyryltrichlorophosphorus. Styryl-2-chlorostyryl-
trichlorophosphorus is hydrolyzed to the corresponding acid, and reacts with
sulfur dioxide to give the chloride of styryl-2-chlorostyrylphosphinic acid.
Treatment of styryl-2-chlorostyrylphosphinic and bis-2-chlorostyrylphosphinic
acids with alcoholic potassium hydroxide results in the formation of
styrylphenylacetylenylphosphinic and bis-phenylacetylenylphosphinic acids.
Under the action of phenols and aromatic amines, the chlorides of styryl-2-
chlorostyrylphosphinic and bis-phenylacetylenylphosphinic acids are converted
to the corresponding esters and anilides. Yields, melting points, crystal
type, and analytic data are given for all the reaction products. Orig. art.
has 2 tables. /JPRS/

SUB CODE: 07 / SUBM DATE: 30Nov64 / ORIG REF: 001/

Card 1/1   CC   UDC: 546.185:547.341

SOURCE CODE: UR/0079/66/036/007/1262/1267

AUTHOR: Petrov, K. A.; Nifant'ev, E. P.

ORG: Institute of Organic Chemistry, AN UkrSSR (Institut organicheskoy khimii AN UkrSSR)

TITLE: Phosphorylation of phenylbutadiene

SOURCE: Zhurnal obshchey khimii, v. 36, no. 7, 1966, 1262-1267

TOPIC TAGS: phosphorylation, butadiene, phosphorus chloride

ABSTRACT: Phosphorus trichloride reacts with excess phenylbutadiene (1:3 ratio) to form bisphenylbutadienyltrichlorophosphorus. Phenyltetrachloro-phosphorus and styryltetrachlorophosphorus phosphorylate phenylbutadiene (in a 1:1 ratio) to yield phenylbutadienylphenyl- and phenylbutadienylstyryl-trichlorophosphorus. The phosphorylation products under go hydrolysis with water, yielding the corresponding phosphinic acids, while sulfur dioxide converts them to the chlorides of the corresponding phosphinic acids. The chlorides of bisphenylbutadienyl-, phenylbutadienyl-, phenylbutadienylphenyl-, and phenylbuta-dienylstyrylphosphinic acids are hydrolyzed by water to the acids, while reaction with phenol and aniline yields the corresponding phenyl esters and anilides. Bromination of phenylbutadienylphenylphosphinic acid yields a mixture of two bromine-containing acids: phenyltribromobutenylphenylphosphinic and phenyl-tetrabromobutylphenylphosphinic acids. Dehydrobromination of the two acids with alcoholic alkali results in the formation of phenylbutadienylphenylphosphinic acid. The latter can be formed only if the phosphorus-containing group is in the γ-position of the diene chain. Orig. art. has: 1 figure and 1 table.

SUB CODE: 07, 07 / SUBM DATE: 21Jun65 / ORIG REF: 001 / OTH REF: 002

UDC: 547.538.3

BARBUKOVA, V.I., kand. ist. nauk; DEMIDOVA, Z.F., kand. ist. nauk;
POSELYANINA, O.K., kand. ist. nauk; SORIN, Yu.N., kand.
ist. nauk; SHATVOROVA, L.D., kand. ist. nauk; KHRUSHCHEV,
V.I.; STARODUBTSEV, N.I.; SHVETS, I.Ye.; TOROPCHIN, N.S.,
red.; IVANOVA, R.N., tekhn. red.

[Krasnyi Aksay; from the history of the M.V.Frunze Rostov
Plant of Agricultural Machinery]Krasnyi Aksai; iz istorii
Rostovskogo zavoda sel'skokhoziaistvennogo mashinostroeni-
ia imeni M.V.Frunze. Rostov-na-Donu, Rostovskoe knizhnoe izd-
vo, 1962. 158 p.
                                               (MIRA 15:9)

1. Prepodavateli Rostovskogo gosudarstvennogo universiteta
(for Barbukova, Demidova, Poselyanina, Sorin, Shatvorova).
2. Otvetstvennyy sekretar' mnogotirazhnoy gazety "Krasnyy
aksayets" (for Khrushchev). 3. Zaveduyushchiy kabinetom po-
liticheskogo prosveshcheniya partiynogo komiteta Rostovskogo
zavoda sel'skokhozyaystvennogo mashinostroyeniya "Krasnyy
Aksay" (for Starodubtsev). 4. Rabochiy remontno-mekhanicheskogo
tsekha Rostovskogo zavoda sel'skokhozyaystvennogo mashino-
stroyeniya "Krasnyy Aksay" (for Shvets).
              (Rostov-on-Don---Agricultural machinery)

SHATVORYAN, E.P.;   LYAKHOVA, N.D.

Diagnostic significance of the agglutination reaction in bacillary dysentery. Zhur. mikrobiol. epid. i immun. 31 no. 5:117 My '60.
(MIRA 13:10)

(DYSENTERY) (AGGLUTINATION)

GUSEYNOV, G.M., kandidat sel'skokhozyaystvennykh nauk; SHATVORYAN, O.R.,
    inzhener.

Water losses by filtration in temporary irrigation systems of the
cultivated furrow type in Northern Mugan. Gidr.i mel.9 no.2:11-19
F '57.   (MLRA 10:3)
                (Mugan Steppe--Irrigation)

SHATVORYAN, P.V.

Effect of the removal of stones on the productivity of Alpine pastures on the southern slopes of the Gegam Range. Izv. AN Arm. SSR. Biol. i sel'khoz. nauki 11 no.1:99-102 Ja '58.   (MIRA 11:2)

1. Yerevanskiy zooveterinarnyy institut.
        (Armenia--Pastures and meadows)   (Clearing of land)

SHATVORYAN, P.V., mladshiy nauchnyy sotrudnik

Effect of mineral fertilizers on the productivity of pastures in
the alpine belt. Trudy Arm. nauch.-issl. inst.zhiv. i vet. 4:
191-197 '60.   (MIRA 15:5)
            (Armenia--Pastures and meadows--Fertilizers and manures)

SHATYLOVA, O.

Electronic consultant. Nauka i zhyttia 12 no.9:38 S '62.

(MIRA 16:1)

(Yalta--Electronic apparatus and appliances)

SHATYRKO, A.S.

Use of water from the Kislyy Klyuch mineral spring on Kunashir
Island. Vop. kur., fizioter. i lech. fiz. kul't. 26 no.3:257-258
My-Je '61.   (MIRA 14:7)
              (KUNASHIR ISLAND—MINERAL WATERS)

MARKOV, Ivan Ivanovich; SHATYREG, Aleksey Semenovich; KACHNUK,M., red.

Truskavets. L'vov, Kameniar, 1965. 27 p. (MIRA 18:9)

SHATYRKO, I., nachal'nik sluzhby perevozok (Stavropol')

Problems involving more than just one airport. Grazhd.av. 18
no.10:28-29 O '61.   (MIRA 15:5)
                    (Aeronautics, Commercial)

SHATIRKO, I.

      Karachaevsk airport. Grazhd.av. 19 no.7:14-15 Jl '62.
                                             (MIRA 15:8)
      1. Nachal'nik otdela perevozok Stavropol'skogo aeroporta.
          (Stavropol' Territory—Airports)

GRIGORIEV

SHATYUNKOV, A.L., inzhener.

Device for a centralized feed of lacquer to sprayer booths. Der.
prom. 5 no.11:26 N '56.   (MLRA 10:1)

1. Moskovskaya mebel'naya fabirka no.5.
     (Spray painting) (Lacquer and lacquering)

SHATZ, A.U., provizor

Recollections of the first strike of the first strike of St. Petersburgh pharmacists. Apt.delo 9 no.2:55-58 Mr-Ap '60.
(MIRA 13:6)

(LENINGRAD--STRIKES AND LOCKOUTS--PHARMACISTS)

STARIK, I.E., SOBOTOVICH, E.V., SHATZ, M.M., LOVTSUS, G.P.

Uranium and lead in the "tectites."

40

"METEORITKA" (Meteorites-Studies) Issue no. 20 - 1961, sponsored by the
"Committee on Meteorites" of the Soviet Academy of Sciences - Moscow 1961,
208 pages, and containing Collected Works("Trudy") of the "9th Meteorite Conference
Organized by the Committee on Meteorites of the Soviet Academy of Sciences" and
Held in KIEV on 2-4 June 1960.

SHATZ, R.S., inzh (Moskva)

Gasoline-proof concrete. Stroi. pred. neft. prom. 3 no.2:13-16
(MIRA 11:4)
F '58.   (Tanks) (Reinforced concrete) (Gasoline--Storage)

SHAUB, V.I., zasluzhennyy uchitel'

Training of students in the process of agricultural work.
Biol.v shkole no.4:48-51 Jl-Ag '60.   (MIRA 13:7)

1. Srednyaya shkola RSFSR No. 14, Uzhura, Krasnoyarskogo
kraya. Delegat Vserossiyskogo s"yezda uchiteley.
                (Agriculture--Study and teaching)

15-1957-3-3676

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 3, p 171 (USSR)

AUTHOR: Shaub, Yu. B.

TITLE: An Attachment to the Potentiometer EP-1 for Increasing the Sensitivity of the Receiving Circuit When Ground Connections are Poor (Pristavka k potentsiometru. EP-1 dlya povysheniya chuvstvitel'nosti priyemnoy tsepi pri plokhikh usloviyakh zazemleniya)

PERIODICAL: Sb. nauch-tekhn inform. M-vo geol. i okhrany nedr, 1955, Nr 1, pp 87-92

ABSTRACT: In the potentiometer a grid and a cathode tube 1P2B are used in place of a galvanometer, but a galvanometer is included in the anode circuit of the tube. A compensation for the initial current in the tube is supplied when the input potential is zero. The supply for the attachment to the potentiometer is produced from dry batteries. The internal resistance of the recording device, through the use of the attachment, increases

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15-1957-3-3676

An Attachment to the Potentiometer EP-1 for Increasing the Sensitivity of the Receiving Circuit When Ground Connections are Poor

from 300 ohms to about 10^8 or 10^9 ohms. The sensitivity of the device reaches 2.5 scale divisions for 1 mv. To increase the sensitivity, several tubes in parallel may be used. Inasmuch as the potentiometer without the attachment may have a high sensitivity, it is expedient to use the supplementary device only when ground connections are poor.

N. I. V.

Card 2/2

SHAUB, Yu.B.

Use of amplitude, phase, and frequency measurements in electric prospecting. Izv. AN Kazakh.SSR. Ser.geol.no.3:96-128 '57.
(MIRA 10:10)

(Prospecting--Geophysical methods)

SHAUB, Yu.B.

Field of the spherical porphyritic ore body polarized by uniform alternating current. Vest. AN Kazakh. SSR 14 no.5:45-54 My '58.

(MIRA 11:?)

(Polarization (Electricity)) (Electric conductivity) (Ores)

SHAUB, Yu. b., Cand Tech Sci -- (diss) "Research into the applicabi-
lity of generating oscillatory contour for aerial electrical survey
with audible frequencies." Leningrad, 1960. 14 pp; (Ministry of High-
er and Secondary Specialist Education RSFSR, Leningrad Orders of Lenin
and of Labor Red Banner Mining Inst im G. V. Plekhanov); 250 copies;
price not given; (KL, 17-60, 161)

87972

S/049/60/000/010/008/014

E133/E414

3.9000

AUTHOR   Shaub   Yu. B.

TITLE   The Use of a Rotating Magnetic Field Method in
              Electro-Mapping

PERIODICAL   Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya,
              1960. No. 10, pp 1485-1489

TEXT   The author considers the method normally used in these
surveys with two aircraft, one flying behind the other2 both
equipped with a pair of mutually perpendicular antennae,   The
antennae in the first aircraft produce a rotating magnetic field
which is transmitted.   The antennae in the second aircraft act as
receivers   The value of this method is that no deflection is
recorded in the second aircraft if there is no conducting stratum
below, independently of the distance between the aircraft (Ref. 1).
The author considers the variation of the signal components as a
function of the specific resistance of a semi-infinite,
homogeneous Earth   Expressions for the components of the
secondary magnetic fields produced by induction currents in the

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S/049/60/000/010/008/014
E133/E414

The Use of a Rotating Magnetic Field Method in Electro-Mapping

Earth are taken from Ref 2 and 3.   Fig 2 and 3 show the variation
of the real and imaginary parts of T with B (these are defined
in Ref 3) for six different aircraft altitudes.   The graphs
indicate that a zero deflection can be obtained for the real and
imaginary components by varying the altitude and distance apart
of the aircraft.   These null deflection points can be used to
increase instrumental sensitivity, so that regions of anomalous
conductivity can be detected and surveyed.   The author gives
graphs of the real and imaginary parts of the deflection as functions
of p (the specific resistance) for an aircraft altitude of 50 m
and distance between aircraft of 100 m (Fig 4a), 150 m (Fig 4B),
200 m (Fig 4B) and 300 m (Fig 42).   It is thus shown that the
distance apart of the aircraft can be varied to give optimum
mapping conditions, and hence it is possible to make a
differential survey of variously conducting strata by this method
There are 4 figures and 3 references: 1 Soviet and 2 non-Soviet.

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87972

S/049/60/000/010/008/014
E133/E414

The Use of a Rotating Magnetic Field Method in Electro-Mapping

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut
metodiki i tekhniki razvedki (All-Union Scientific
Research Institute for Prospecting Methods and
Technology)

SUBMITTED: January 26, 1960

Card 3/6 2

29506
S/049/60/000/011/007/012
D247/D305

/3.7700

AUTHOR: Shaub, Yu. B.

TITLE: Directional reception of secondary signals in electrical
                sounding with the aid of a rotating magnetic field

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya,
                no. 11, 1960, 1608-1611

TEXT: Directional reception and radiation is only easily applicable
at sufficiently high radio frequencies. Obviously this method could also
be of great importance in electrical sounding, increasing its resolving
power and accuracy. To determine the position of a conducting body, it is
necessary to measure the phase of the balancing-out signal, or its active
and reactive component. To obtain the directional graphs of differently-
measured parameters, it is necessary to investigate the distribution of
secondary signals by a deviation of a disturbing spherical body from the
vertical plane containing the line of flight of the airplanes. The author ✗
derives for these secondary signals

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Directional reception of ...

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$$H_{2Z} = H_{2Z} \cos \psi - H_{2Y} \sin \psi \tag{3}$$

and

$$H_{2Y} = H_{2Y} \cos \psi + H_{2Z} \sin \psi \tag{4}$$

and for the voltage of these signals the formula $V_{2Z} = -iCH_{2Z}$,

$V_{2Y} = iCH_{2Y}$, where C is the constant of the receiving loop, To compensate the primary field, one must add 90° to the total signal of the horizontal frame V_Z and subtract it from the total signal of the vertical frame V_Y. The obtained balancing-out signal $\Delta V = V_Y - iV_Z$ contains no components of the primary field and is determined by the electric conductivity of the body, its radius and its location. Using the above formulae, the author derives equations for the ΔV, active component, reactive component, modulus and the phase of ΔV. Directional diagrams are plotted with the aid of these equations In the author's opinion,

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Directional reception of...

29506
S/049/60/000/011/007/012
D247/D305

the existence of such diagrams proves the possibility of realizing the directional reception by the method of rotating magnetic field in surface and well-sounding. There are 3 figures and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: G. Törnqvist, Some practical results of airborne electromagnetic prospecting in Sweden, Geophys. Prosp.,6, no. 2, 1958 (Sb. perevodov No 25 ILB MGiON SSSR), (Collection of translations, No. 25, ILB MGiON USSR).

SUBMITTED: January 26, 1960

Card 3/3

26983   S/049/60/000/012/007/011
D214/D305

3,9110

AUTHOR: Shaub, Yu.B.

TITLE: On interpreting the results of measuring the angle of inclination of the plane of polarization of the natural alternating magnetic field

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 12, 1960, 1771 - 1777

TEXT: The author has investigated theoretically the effects of subterranean spherical and cylindrical conducting bodies on the angle of inclination of the plane of polarization of the natural alternating magnetic field. This problem is of particular interest in view of the recent development of prospecting using this effect (Ref. 7: S.H. Ward, Prospecting by use of natural alternating magnetic fields. Canad. Min. and Met. Bull., 51, No. 556, 1958; Ref. 8: S.H. Ward, AFMAG - airborne and ground. Geophys., 24, No. 4, 1959). Considering first a spherical conducting body, let the profile, along

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26983

S/049/60/000/012/007/011
D214/D305

On interpreting the results of ...

which measurements are made pass at height h over the center of such a body radius a and with specific conductivity γ, (Fig. 1). At a point M and frequency f, the 2 normal components of the natural alternating field in the absence of the body are

$$H_{1x} = H_{ox} e^{i\omega t}, \tag{1}$$

and

$$H_{1y} = H_{oy} e^{i(\omega t + \varphi)}, \quad \omega = 2\pi/f, \tag{2}$$

where φ, the phase shift, is unimportant, so that $H_{ox} \approx H_{oy}$. The angle of inclination α is given by

$$\text{tg } \alpha = \frac{H_{zo}}{H_{xo}} \tag{3}$$

where $H_{zo} = /H_{2z}/$, (4) and $H_{xo} = /H_{1x} + H_{2x}/$ (5)

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On interpreting the results of ...   D214/D305

and H_{2x} and H_{2z} are the components of the secondary field due to the conducting body. This field is equivalent to that from a magnetic dipole, and neglecting H_{2x} which is small by comparison with H_{1x}, it may be shown that

$$\text{tg } \alpha = \frac{3}{2} a^3 \frac{xh}{r^5} /D/, \tag{10}$$

where

$$D = \frac{3vJ_{-1/2}(v) - (3 + v^2)J_{1/2}(v)}{v^2 J_{1/2}(v)} \tag{7}$$

$J_{\pm 1/2}$ are Bessel functions of order $1/2$ with argument $v = \sqrt{i\gamma\omega\mu_0}$ a = $= \sqrt{ip}$ a, and μ_0 is the magnetic permeability. The function $F(\xi)$, expressing the variation of tan α along the profile, is shown in Fig. 3, and it has extremes at $\xi = \pm 0.5$. Hence, the depth of the

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S/049/60/000/012/007/011
D214/D305

On interpreting the results of ...

sphere h is found to be equal to the distance between these two extremes, a relation independent of any parameters of the body and of the working frequency. When P is so large that $/D/ \approx 1$, the radius of the body, a, may be found from the value tan α_0 at $\xi = \pm 0.5$, when

$$a = 1.3 \, \triangle x \, \sqrt[3]{\text{tg } \alpha_0}. \qquad (16)$$

The radius may also be determined from the tangent to the x vs. tan α curve at x = 0. If x_1 is the point of maximum tan α, and y_1 the corresponding value of tan α on this tangent, then

$$a = 1.75 \, \sqrt[3]{x_1^2 \, y_1}. \qquad (17)$$

To determine the electrical conductivity of the body, measurements must be made at 2 frequencies. The ratio of the maximum values of

Card 4/8

On interpreting the results of ...

tan α gives a function from which, knowing the frequencies, the conductivity may be found. For a cylindrical body of infinite extent, as shown in Fig. 7, the primary field is as before, and now

$$tg\ \alpha = \frac{a^2}{h^2}\ F'(\xi)\ /D'/,\qquad (26)$$

where

$$F'(\xi) = \frac{2\xi}{(1 + \xi^2)^2}\qquad (27)$$

and $D' = J_2(v)/J_0(v)$, with v and ξ as before, and the J's are Bessel functions. The variation of $F'(\xi)$ with ξ is shown also and in this case, the maximum and minimum of tan α occur at $\xi = \pm 1/\sqrt{3}$ giving a basis for the determination of h. The radius may be found, for $/D'/\approx 1$ from the maximum inclination by

$$a = 0.7\ \triangle x\ \sqrt{tg\ \alpha_0}\qquad (30)$$

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On interpreting the results of ...

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D214/D305

and also from the slope of the tangent to the x vs. tan α curve as before

$$a = 1.22 \sqrt{x_1 \, y_1}. \tag{31}$$

The conductivity may be determined as for the spherical body. For terrestrial measurements, when a/h is not too small, α_0 may be up to about 10^0, but for airborne soundings, with smaller a/h, it is limited to a few degrees. There are 10 figures and 10 references: 7 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: L. Cagniard, Basic theory of the magnetotelluric method of geophysical prospecting. Geophys., no. 3, 1953; S.H. Ward, Prospecting by use of natural alternating magnetic fields. Canad. Min. and Met. Bull., 51, no. 556, 1958; S.H. Ward, AFMAG – airborne and ground. Geophys., 24, no.4, 1959.

SUBMITTED: May 30, 1960

Card 6/6

SHAUS, Yu. s., Cand. Phys-Math. Sci.   (Diss) "Theoretical and
Experimental Investigation of a Method of Rotating Magnetic Field
(Variant of Aeroelectroruvverin)." Leningrad, 1961, 19 p (Le-
ningrad State Univ.) 150 copies (KL Supp 12-61, 264).

S/169/62/000/009/052/120
D228/D307

AUTHOR: Shaub, Yu. B.

TITLE: Using measurements of the generating circuit's loop
              parameters for audio frequency electric prospecting

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 9, 1962, 40, ab-
              stract 9A265 (Tr: Vses. n.-i. in-ta metodiki i tekhn.
              razvedki, coll. 3, 1961, 118-130)

TEXT: For electric mapping with the aim of prospecting it is in-
teresting to study the change in the resistance of emission of the
electric or magnetic dipole on radio or audio frequencies. Changing
from an electric to a magnetic emitting dipole allows the prospec-
ting depth to be increased. It also permits the supply generator's
power to be decreased from hundreds of watts to parts of a watt.
The solution of the direct and the converse problem for spherically
shaped bodies is given together with the results of trial flights
in an ИЛ-12 (IL-12) aircraft with a coil of 18 turns, 100 m^2 in
area. It is noted that frequency-measurement units can be protected

Card 1/2

Using measurements of ...

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D228/D307

from the whole spectrum of interference. /¯Abstracter's note: Com-
plete translation._7

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s/169/62/000/009/051/120
D228/D307

AUTHOR: Shaub, Yu. B.

TITLE: Equipment for electric prospecting by the method of
               measuring the generating circuit's resonant frequency

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 9, 1962, 40, ab-
               stract 9A264 (Tr. Vses. n.-i. in-ta metodiki i tekhn.
               razvedki, coll. 3, 1961, 131-137)

TEXT: It is rather difficult to measure the frequency on audio
frequencies with a definite, preset degree of rapid action. In this
connection it is expedient to turn to the measurement of the phase
difference of two oscillations. In the described circuit the cir-
cular scan of the signal being measured is achieved by supplying
90°-displaced voltage to the oscillograph's deflecting plates. The
brightness is modulated by a pedestal frequency signal from a spe-
cial oscillator, as a result of which a moving arc appears on the
oscillograph screen. Two ФСК-1 (FSK-1) photoresistances, glued to
the screen, track the arc's movement. The error signal, induced by

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Equipment for electric ...

S/169/62/000/009/051/120
D228/D307

a change in the photoresistances' illuminance when the arc moves, controls the pedestal modulating voltage's frequency. The oscillator's frequency is modified so that the luminous arc flashes at the same place on the screen. /‾Abstracter's note: Complete translation._7

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STAUB, Yu.B.

Quantitative measure of information furnished by methods of aerial electric prospecting. Izv. AN SSSR. Ser. geofiz. no. 3:360-368 Mr '61.   (MIRA 14:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metodiki i tekhniki razvedki.
           (Electric prospecting)   (Aeronautics in geology)

29581
S/049/61/000/006/010/014
D239/D306

6,9400

AUTHOR: Shaub, Yu. B.

TITLE: Separation of geophysical anomalies from an intense
               noise background

PERIODICAL: Akademiya nauk. Izvestiya. Seriya geofizicheskaya,
               1961, no. 6, 898-904

TEXT: The separation of signals considerably less than the amplitude
of the noise background has assumed considerable importance in almost
all branches of geophysics. The methods used for it must be capable
of simulation by electronic elements which virtually limits the mathe-
matical operations involved to addition and subtraction. The method
proposed in this article consists in generating the function

$$y_{(x)_k} = y_{(x_{k-2})} + y_{(x_{k-1})} - y_{(x_{k+1})} - y_{(x_{k+2})} . \qquad (6)$$

where the y's are the values of the measured quantity or signal at

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Separation of geophysical...

the discretely spaced points x_1 $x_2...x_{k-2}$, x_{k-1}, $x_k...,$ etc. It can easily be shown that the signal-to-noise ratio is doubled in this instance. By taking the values of y at e.g. four points before and four points after x_k, the improvement would be as $\sqrt{8}$ and so on. Some examples are illustrated. A schematic diagram of a suitable electrical arrangement employing only resistors, capacitors and vacuum tubes is given together with an easily-followed elementary explanation of its operation. Actual circuit details are not given nor any results obtained with an actual apparatus. Its application to aeroelectric research is suggested as a potential field of use. There are 8 figures and 3 Soviet-bloc references.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut metodiki i tekhniki razvedki (All-Union Scientific Research Institute for Methodology and Practice of Prospecting)

SUBMITTED: January 17, 1961

Card 2/2

SHAUB, Yu.B.

Experimental study of the specific features of the method of a rotating magnetic field. Izv.AN SSSR. Ser. geofiz. no.7:1015-1021 Jl '61.
(MIRA 14:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metodiki i tekhniki rezvedki.
(Electromagnetic prospecting)

44264

S/785/61/000/008/002/005
E194/E155

AUTHOR: Shaub, Yu. B.

TITLE: An instrument for the accurate measurement of
            alternating-current amplitude ratio

SOURCE: USSR. Ministerstvo geologii i okhrany nedr. Osoboye
            konstruktorskoye byuro. Geofizicheskoye
            priborostroyeniye. no.8. 1961. 66-69

TEXT: The instrument is designed to measure the amplitude
ratio of two signals which may differ in phase or frequency. It
is based on the comparator principle and its special feature is
the use of transistors for input switching. Signals with an
amplitude of about 50 microvolts are applied through a portable
amplifier giving an input to the switching system of 50 millivolts.
A change in amplitude ratio of 1% causes full-scale deflection of
a recording instrument type CK -100 (SK-100). The two input
switches are built up of four transistors. Individual windings for
each pair of transistors apply a 30 c/s sinusoidal switching
voltage between the base and collectors of each pair so that they

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An instrument for the accurate ...   S/785/61/000/008/002/005
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open and close in turn at a frequency of 30 c/s. Thus the two
input signals are alternately applied to the input of a selective
amplifier. The output is a 30 c/s signal proportional to the
amplitude ratio of the two input voltages. A phase-sensitive
detector determines which of the voltages is the greater, and the
differential feature is found to give better results than the
usual half-wave arrangement. Zero is set by applying the same
voltage to both inputs. The zero drift and temperature variations
are small. There was no need to make the instrument specially
stable, but both sensitivity and stability could readily be
increased.
There is 1 figure.

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S/785/61/000/008/003/005
E194/E155

AUTHOR: Shaub, Yu.B.

TITLE: Automatic compensation of electro-magnetic and
            vibration interference in electrical prospecting

SOURCE: USSR. Ministerstvo geologii i okhrany nedr. Osoboye
            konstruktorskoye byuro. Geofizicheskoye
            priborostroyeniye. no.8. 1961. 70-75

TEXT: The sensitivity of electrical prospecting from the air
is limited by the noise level arising from vibration of the
antenna loop in the earth's field, and from atmospheric and other
interference, which gives spurious readings of field change.
In the arrangement described the primary field (produced by an
antenna wound round the aircraft fuselage) is impulse-modulated.
In intervals between the applications of the primary field the
receiver input measures the noise. Its output is applied to a
voltage difference recorder so that the interference is
automatically cut out. An expression derived for the error of
measurement shows that during a single switching cycle the error
depends not on the actual noise level but on its rate of change.
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Automatic compensation of ...   S/785/61/000/008/003/005
                                     E194/E155

The error diminishes as the switching time is reduced.
Examination of the most unfavourable case of stepwise change in
the interference as the switch operates indicates that by
suppressing noise the error of measurement may be reduced by a
factor of 10 or more, the improvement being appreciably greater
for less unfavourable types of interference change.
There are 2 figures.

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SHAUB, Yu.B.

Stabilized generator of orthogonal voltages with magnetic
frequency divider. Geofiz.prib. no.8:102-106 '61.   (MIRA 15:7)
(Electric generators)

AFANAS'YEV, Yu.V.; GOL'DREYER, I.G.; KHVOSTOV, O.P.; SHAUB, Yu.B.

Compensated automatic measurements on alternating current.
Geofiz. prib. no.9:37-45 '61.   (MIRA 15:11)
        (Electric prospecting--Equipment and supplies)

SHAUB, Yu.B.

Way of eliminating nonstable phasemeters with narrow-band
discriminating filters. Geofiz. prib. no.9:87-89 '61.
(MIRA 15:11)
(Electronic measurements)

SHAUB, Yu.B.

Automatic inclusion of corrections in continuous geophysical
measuring. Geofiz. prib. no.10:25-34 '61.   (MIRA 15:3)
(Electromagnetic prospecting—Electronic equipment)

S/169/61/000/011/024/065
D228/D304

AUTHOR: Shaub, Yu. B.

TITLE: Some questions of aeroelectric prospecting by the rotating magnetic-field method

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 11, 1961, 29, abstract 11A258 (V sb. Prikl. geofizika, no. 29, M., 1961, 50 - 71)

TEXT: A method consisting of the creation of an alternating magnetic field with a vector rotating circularly and the study of the disturbing influence of good-conducting bodies is described. A solution is given for the direct and the converse problem of a good conducting sphere and thin vertical sheet (an orebody's analog) situated in a rotating magnetic field. The obtained correlations are analyzed from the viewpoint of rationally choosing the best field components for measurement purposes and the optimum dispersions of the generator and receiver casings in order to guarantee the maximum prospecting possibilities and depth-potential of the method. It is established that the best parameters for measurement are the phase

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Some questions of aeroelectric ...   S/169/61/000/011/024/065
                                          D228/D304

of the signal of the balancer and its active component, and that
the most rational casing dispersions should on an average be twice
the value equal to the depth of the sought objects plus the flight
altitude of the aircraft with the apparatus. The existence of a pos-
sibly large magnetic moment of the generator casings which is pro-
portional to the area of the coils and the power of the generator,
is the main requirement for the apparatus. The most suitable air-
craft for this method are the ИЛ 2 (IL-2) and АН 2 (AN-2) (with
a minimum flight altitude of about 50 m), in which it is possible
to ensure a magnetic moment of about 10^3 amp. coil. m^2 for the cas-
ings. It is possible to obtain a magnetic moment of about 10^4 amp.
coil. m^2 for the casings in the ИЛ-12 (IL-12) and ИЛ-14 (IL-14)
aircraft, but the minimum flight altitude of these aircraft in con-
siderably greater. In measuring the signal of the balancer of the
receiver frames the receiver-measuring apparatus must have a sensi-
tivity of about 0.1 - 0.05 γ at a compensational error of no more
than 10 % which ensures the possibility of detecting large well-
conducting orebodies at depths of 100 - 200 m from the aircraft's
flight line. The optimum search frequency is determined by the elec-

Card 2/3

... (largely by the electro-conductivity) characteristic of the body and by its dimensions. A set of interchangeable in the range 200 - 2000 c/s is recommended for ore prospecting ferent geologic environments. It is established that too high frequencies are strongly absorbed in the host-rocks which may considerably weaken the primary field and create anomalies of a non-ore origin. [Abstractor's note: Complete translation].

Card 1.