AUTHORS: Dvoretskiy,Ye.R., and Malyy, D.D.   SOV-115-58-3-10/41

TITLE: Automation of the Control System in Machine-Building (Avto-
              matizatsiya kontrolya v mashinostroyenii.)

PERIODICAL: Izmeritel'naya tekhnika, 1958 Nr 3, pp 34 - 39 (USSR)

ABSTRACT: The authors make a general survey of the subject of "active"
              control of devices, i.e. controlling machines in the work
              process. The article also includes brief design description
              characteristics and drawings of several Bureau of Inter-
              changeability control devices for grinding machines: "BV-711",
              for both automatic and visual control; "BV-962", for auto-
              matic control of "KhSh-202" circular grinder (Fig. 1);
              "BV-904" and "BV-907", for circular grinders with visual
              control of outer diameters of 5 to 60 mm (Fig. 2); pneumatic
              "BV-928", for "active" and visual control of 8 to 60 mm dia-
              meter (Fig. 3); "BV-903", for visual control of 15 - 60 mm
              diameters (Fig. 4); "BV-912", for plain grinders (produced
              by the Chelyabinsk Plant on orders); "BV-967", for "active"
              control on internal grinders "3A250" and "3B250" (Fig. 5),
              differing from "BV-962" only in the design of the measuring
              part; "BV-893" and "BV-918" (Fig 6 and 7), for "active"
              control of centerless grinders "3G182". Foreign designs of

Card 1/2

Prospects for the Development of the Means for Measuring Lengths and Angles in Machine-Building

SOV-115-58-3-9/41

gage with optic readings (Fig. 3) for measuring with 0.01 mm accuracy the deviations of flat or cylindrical surfaces from horizontal position; blocks for checking cones (Fig. 4); combined double sinus-tables (Fig. 5) inclinable lengthwise and crosewise. The planned new measuring devices for precision gear wheels, gear butting machine tools and tools are specified in the new "GOST" standard. It is stated that the design of the measuring devices produced in the USSR is, with exceptions, on the level of the best foreign designs, but that production technology and quality need improvement. There are 8 tables, 3 diagrams and 2 photos.

1. Industrial plants--Production   2. Instruments--Development
3. Measurement--Standards

Card 2/2

SOV-115-58-3-9/41

AUTHORS: Zimin, N.I., and Malyy, D.D.

TITLE: Prospects for the Development of the Means for Measuring
Lengths and Angles in Machine-Building (Perspektivy razvi-
tiya sredstv izmereniya dlin i uglov v mashinostroyenii.)

ABSTRACT: The article contains information on the development of the
production of measuring devices and instruments between
1940 and 1958 (tables 1 and 2). The production increase of
precision instruments and a specialized instrument plant are
mentioned. New instruments planned for assimilation by the
Byuro vzaimozamenyayemosti (Bureau of Interchangeability) are
listed, and several such new instruments or devices are de-
scribed as follows: "microcators", with 0.5 and 0.2 micron
divisions and a small-size "microcator" (or "micator") for
use in different control devices, shown in Fig. 1; optical
spring devices, "opticators", for comparative measurement of
outer dimensions, in which the common instrument needle is
replaced by a reflection mirror fixed on a twisted flat
spring, and two color light filters set the limits of the
measurment range; measuring heads with electric contacts as
illustrated in schematic diagram (Fig. 2); micrometer level

Card 1/2

MALYY, D.D.

Equipment used in technical measurements in machinery industry;
achievements and urgent tasks. Stan. i instr. 28 no.11:4-7 N '57.
(MIRA 10:12)

(Measuring instruments)

MALYY, D.D., inzhener; TAYTS, B.A., kandidat tekhnicheskikh nauk, dotsent.

Gear measuring instruments. Vest.mash. 33 no.6:72-77 Je '53. (MLRA 6:6)
(Gearing) (Measuring instruments)

MALYY, A.S., inzh.

Unbalanced voltage in registering voltmeters. Energetik. 13
no.4:20-21 Ap '65.   (MIRA 18:6)

KUDRYAVTSEV, A.A., inzh.; MALYY, A.S., inzh.; ROZENKNOP, M.P., kand. tekhn. nauk

Locating short-circuits in electric power transmission lines. Elek.
sta. 35 no.9:73-77 S '64.   (MIRA 18:1)

MALYY, A. S., inzh.

Synchronization network with a matching autotransformer. Energetik
12 no.4:14 Ap '64.
(MIRA 17:7)

MALYY, A.S., inzh.; ROZENKNOP, M.P., kand. tekhn. nauk

F-E34 meter. Elek. sta. 34 no.7:60-62 Jl '63.

(MIRA 16:8)

ABRAMYAN, Sh.G., inzh.; GOLUBCHIK, G.Ya., inzh.; MALYY, A.P., inzh.

Network for measuring the total active power of an electric power
plant. Elek. sta. 36 no.10:78-79 O '65.

(MIRA 18:10)

MALYY, A. L.

DECEASED

c' 1962

1963/3

AUTOMATION

see ILC

VOL'FKOVICH, S.I.,akad.; ILLARIONOV,V.V.; IONASS,A.A.; MALYY,A.A.
[deceased]; REMEN, R.Ye.; SHERESHEVSKIY, A.I., red.

[Hydrothermal processing of phosphates for the produc-
tion of fertilizers and feed stuffs] Gidrotermicheskaia
pererabotka fosfatov na udobreniia i kormovye sredstva.
Moskva, Khimiia, 1964. 170 p.   (MIRA 17:12)

MALYUZHINETS, S.D., kand. fiziko-matemat. nauk, dotsent

Dispersion of sound velocity in a gas-liquid drop mixture. Trudy
MIIT no.164:165-172 '63.   (MIRA 18:3)

83306

S/179/60/000/004/004/027
E191/E181

On the Effect of the Atomisation of a Liquid Jet Introduced into a Gas Stream on the Flow Parameters beyond the Mixing Zone

pressure. However, in the atomisation of a liquid jet some energy of the gas flow is necessarily expanded on the acceleration or deceleration of the liquid, but not necessarily in evaporation. Flows are possible in which the evaporated droplets have everywhere the same velocity as the gas. In the present case, the acceleration leads to a deceleration of the gas flow between the entry and exit sections. This is illustrated in Fig 4 showing the exit-Mach number against the entry Mach number. The deceleration of the gas is lower with smaller droplets. This effect does not become significant until a droplet radius of about one millionth of a centimeter, which is an unrealistic size, and thus the effect cannot be experimentally verified.
There are 4 figures.

Card 3/3

83306

S/179/60/000/004/004/027

B191/B181

On the Effect of the Atomisation of a Liquid Jet Introduced into a
Gas Stream on the Flow Parameters beyond the Mixing Zone

expressing the surface energy at the boundary of the liquid and the
gas. In the formulation, the non-dimensional parameters used are
the relative mass concentration of the gas and the liquid in the
mixture, the relative gas density referred to the mixture density,
the relative gas temperature and the relative gas pressure. The
problem consists in determining these quantities in the exit cross-
section from the known gas parameters in the entry cross-section
and the known density of mass distribution of the liquid in the
droplets in the exit section. To determine the effect of fineness
a simplified case is considered, in which the liquid jet
temperature is equal to the gas temperature at entry, the liquid
gas velocity is much smaller than the gas velocity and all droplets
in the exit section have the same size. Solving the equations, it
is shown that, with finer atomisation, the total pressure loss
becomes smaller for a given Mach number at the gas inlet section.
This can be explained by an analogy between atomisation and
evaporation in a supersonic flow. In both cases, heat is extracted
from the gas, which assists a better restoration of the total

Card 2/3

83306

S/179/60/000/004/004/027
E191/E181

11.7430
11.7410

AUTHOR: Malyuzhinets, S.D. (Moscow)

TITLE: On the Effect of the Atomisation of a Liquid Jet Introduced into a Gas Stream on the Flow Parameters beyond the Mixing Zone

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Mekhanika i mashinostroyeniye, 1960, No 4, pp 19-24

TEXT: The paper deals with the problem of the effect of the fineness of atomisation of a liquid jet introduced into a one-dimensional gas stream on the flow parameters at the point where the velocities of the gas and the liquid droplets can be considered equal. The liquid jet is introduced through a hole in the wall of a cylindrical tube in which the gas flows. The tube is long enough to allow uniform distribution of droplets across the exit cross-section of the tube as a result of the entrainment of the droplets by the gas. The equations of continuity, impulse and energy are applied to a volume bounded by the cylindrical surface and the cross-sections of the gas tube before and after the jet and a cross-section of the liquid supply tube. The energy equation is given an additional term

Card 1/3

ACCESSION NR: AP5052703

ASSOCIATION: none

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

NO REF SOV: 000   OTHER: 000

Card 2/2

S/0030/64/000/012/0089/0089

AUTHOR: [illegible] (Doctor of physico-mathematical sciences)

TITLE: Investigations of wave diffraction (All-Union Symposium in Tbilisi)

SOURCE: AN SSSR. Vestnik, no. 12, 1964, 89

TOPIC TAGS: wave diffraction, mathematical method

ABSTRACT: A brief outline is given of the proceedings of the third symposium on wave diffraction problems, held in Tbilisi, during 21-30 September, 1964. These symposia are held every two years because of increased interest in the field of wave diffraction in the Soviet Union during the past six years. A total of 170 papers were presented in the presence of 350 delegates. The papers covered topics of mathematical problems of diffraction, spectral operator theory applications to diffraction, integral equations, functional invariant solutions, inverse diffraction theory, average indentation, and particular solutions of special kinds, asymptotic methods, numerical solutions, long wavelengths with small perturbations, diffraction of electromagnetic waves, plasma waves in elastic media, and several others. The general trend in this symposium was a greater use of mathematical techniques in wave diffraction studies.

ANDREYEV, N.; MAKAROV, G.; MALYUZHINETS, G.; PETRASHEN', U.

Introduction. Probl.dif.i raspr.voln. 1:3-4 '62.

(Radio waves)

(MIRA 15:6)

MALYUZHINETS, G.D.; TUZHILIN, A.A.

Electromagnetic field excited by an electric dipole in a wedge like region. Dokl. AN SSSR 146 no.5:1039-1042 0'62.　　　　(MIRA 15:10)

1. Akusticheskiy institut AN SSSR. Predstavleno akademikom V.A. Fokom.
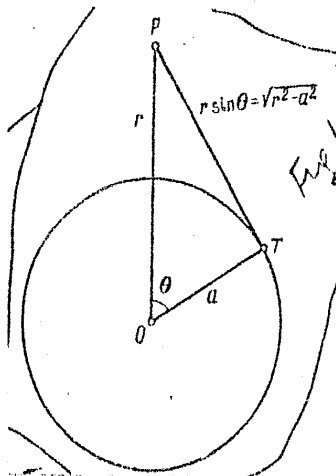
(Dipole moments) (Electromagnetic waves)

Transverse diffusion during ...

S/109/61/006/009/007/018
D201/D302

ASSOCIATION: Institut fizicheskikh problem AN SSSR, akusticheskiy
institut AN SSSR (Institute of Physical Problems AS
USSR; Institute of Acoustics AS USSR)

SUBMITTED: January 1, 1961

Fig. 1.

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Transverse diffusion during ...

a surface wave, propagating around the cylinder with small attenuation. The dependance of this wave on the azimuth φ is determined in the first approximation by the factor

$$e^{i\nu|\varphi|}$$

where $$\nu = ka \left(1 + \frac{1}{2}|g|^2\right).$$ (40)

---- It follows from (40) that formulae (36) and (37) may be applied only for $/g/\ll 1$, when the phase velocity of the surface wave is near that to the velocity in free space and thus the "surface character" of the wave shows little. Finally the strict solution is given in beam coordinates. There are 3 figures and 7 references: 3 Soviet-bloc and 4 non-Soviet-bloc. The references to the English language publications read as follows: N.D. Kazarinoff, R.K. Ritt, IRE Trans, 1959, AP 7, December 21; B.R. Levy, J.B. Keller, Canadian J. Phys, 1960, 38, 1, 128; R.S. Elliott, J. Appl. Phys., 1955, 26, 4, 368; J.R. Wait, IRE Trans, 1960, AP-8, 4, 445.

Card 6/7

Transverse diffusion during ...

S/109/61/006/009/007/018
D201/D302

tion is replaced by the asymptotic expression obtained by mathemati-
cal treatment of the asymptotic representation of Hankel function,
where w, $w_1(t)$ and $w_2(t)$ are Airy functions

$$w_1'(t) - qw_1(t) = 0, \quad q = iMg \tag{36}$$

is derived. With the condition

$$g = - i/g/, \quad q = M/g/ \gg 1 \tag{37}$$

Eq. (36) has a "particular" root equal in first approximation to

$$t = q^2 \tag{38}$$

and in the second approximation having an exponentially small ima-
ginary part. This "particular" root does not exist when the radio-
waves are propagated along the earth surface, i.e. when

$$\frac{\pi}{4} < \text{arc } q < \frac{\pi}{2}; \tag{39}$$

under condition (37) this root exists, however, and corresponds to $\varkappa$
Card 5/7

can be applied, then the integral in (2) takes the form of

$$\Gamma = i \int_C \left[e^{i(\nu|\varphi|+\xi'-\xi)} + \frac{\sqrt{1-\left(\frac{\nu}{ka}\right)^2}-g}{\sqrt{1-\left(\frac{\nu}{ka}\right)^2}+g} \, e^{i(\nu|\varphi|+\xi'+\xi-2\xi_a)} \right] \times \tag{17}$$

$$\times \frac{d\nu}{\sqrt[4]{(kr')^2-\nu^2}\,\sqrt[4]{(kr)^2-\nu^2}},$$

in which ξ' and ξ_a are obtained from ξ for $r = r'$ and $r = a$ respectively. This integral can be evaluated by the method of stationary phase which leads to the following expression for the reflected wave

$$\Gamma' = \sqrt{\frac{2\pi}{kS}} e^{i\left[k(s'+s)+\frac{\pi}{4}\right]} \frac{\cos\chi-g}{\cos\chi+g}, \tag{31}$$

where

$$S = s' + s + \frac{2s's}{a\cos\chi}. \tag{32}$$

which is in full agreement with geometrical optics. If the func-

Card 4/7

29524

Transverse diffusion during ...

$$\frac{\partial \Gamma}{\partial r} + ikg\Gamma = 0 \text{ when } r = a \tag{4}$$

for function Γ. Formulae (1) and (2) give the formal solution of the problem. The authors consider the case when $ka \gg 1$ when asymptotic laws of diffraction at convex plane come into effect. Thus considering the geometry of Fig. 1

$$H_\nu^{(1)}(kr) = \sqrt{\frac{2}{\pi kr \sin\theta}}\, e^{i\left(kr\sin\theta - \nu\theta - \frac{\pi}{4}\right)},$$

$$H_\nu^{(2)}(kr) = \sqrt{\frac{2}{\pi kr \sin\theta}}\, e^{-i\left(kr\sin\theta - \nu\theta - \frac{\pi}{4}\right)}, \tag{15}$$

is obtained, where

$$a = r \cos\theta. \tag{16}$$

If to the main part of contour C in integral (2) the Debye formulae

$$H_\nu^{(1)}(kr) = \sqrt{\frac{2}{\pi}}\, \frac{e^{i\left(\xi - \frac{\pi}{4}\right)}}{\sqrt[4]{(kr)^2 - \nu^2}}, \quad H_\nu^{(2)}(kr) = \sqrt{\frac{2}{\pi}}\, \frac{e^{-i\left(\xi - \frac{\pi}{4}\right)}}{\sqrt[4]{(kr)^2 - \nu^2}}, \tag{13}$$

Card 3/7

Transverse diffusion during ...

$$\Gamma(r, \varphi, r') = -\frac{4\pi i}{ka} \sum_{s=1}^{\infty} \frac{H^{(1)}_{v_s}(kr)\, H^{(1)}_{v_s}(kr')\, e^{|v_s||\varphi|}}{H^{(1)}_{v_s}(ka)\, \frac{\partial}{\partial v}\left[\frac{dH^{(1)}_{v}(ka)}{d(ka)} + igH^{(1)}_{v}(ka)\right]_{v=v_s}} \tag{1}$$

or as a contour integral

$$\Gamma(r, \varphi', r') = \frac{\pi i}{2}\int_{C} e^{|v||\varphi|} H^{(1)}_{v}(kr')\left[H^{(2)}_{v}(kr) - \frac{\frac{dH^{(2)}_{v}(ka)}{d(ka)} + igH^{(2)}_{v}(ka)}{\frac{dH^{(1)}_{v}(ka)}{d(ka)} + igH^{(1)}_{v}(ka)} H^{(1)}_{v}(kr)\right] dv, \tag{2}$$

where the contour C contains all points v_s (s = 1, 2 ...) in the positive direction, which are the roots of

$$\frac{dH^{(1)}_{v}(ka)}{d(ka)} + igH^{(1)}_{v}(ka) = 0, \tag{3}$$

obtained from the boundary conditions

Card 2/7

9.3140 (also $1140,1141,3903$)

AUTHORS: Vaynshteyn, L.A., and Malyuzhinets, G.D.

TITLE: Transverse diffusion during diffraction at a large
             radius waveguide post. Part II. Asymptotic diffraction
             laws in polar coordinates

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 9, 1961, 1489-
             1495

TEXT: In part I of their work the authors derived the general so-
lution of a two dimensional diffraction problem of a waveguide rod
having a radius much larger than the wavelength. In the present
article the authors show that this solution may be also obtained
from the exact solution of the wave equation by using the known
asymptotic formulae for the Hankel function. Using the notation of
their previous work the solution is said to evaluate the function
(r, φ, r') in the multi-sheet plane. The green function, then in a
physical plane is obtained by summation of function Γ along all
sheets. The function is easily obtained as a series

Card 1/7

MALYUZHINETS, G.D.; VAYNSHTEYN, L.A.

Transverse diffusion during diffraction on an impedance cylinder
with a large radius. Part 1: Parabolic equation in beam coordinates.
Radiotekh. i elektron 6 no.8:1247-1258 Ag '61.   (MIRA 14:7)

1. Akusticheskiy institut AN SSSR i Institut fizicheskikh
problem AN SSSR.
            (Radio waves--Diffraction) (Optics, Geometrical)

S/030/61/000/001/014/017
B105/B206

Research in the field of wave diffraction

to October 1, 1960. It was convened by the Acoustics Commission jointly with the Akusticheskiy institut Akademii nauk SSSR (Acoustics Institute of the Academy of Sciences USSR) and the Odesskiy elektro-tekhnicheskiy institut svyazi (Odessa Electrotechnical Institute of Communications). It was attended by about 400 scientists and more than 100 reports were delivered. The reports on acoustics, optics, electrodynamics, seismology, theory of elasticity, hydrodynamics, nuclear physics, and heat engineering were divided into four sections. The expediency of transferring methods from one field of science into others was shown in many reports. At the closing session it was decided to convene regularly joint symposia on the diffraction of waves. It is intended to hold the next Symposium in Gor'kiy in 1962. At the mekhaniko-matematicheskiy fakul'tet Moskovskogo universiteta (Mechanical and Mathematical Division of Moscow University) and the mekhaniko-matematicheskiy fakul'tet Leningradskogo universiteta (Mechanical and Mathematical Division of the Leningrad University) seminars started their activities on the theory of diffraction.

Card 2/2

S/030/61/000/001/014/017
B105/B206

AUTHOR: Malyuzhinets, G. D., Doctor of Physics and Mathematics

TITLE: Research in the field of wave diffraction

PERIODICAL: Vestnik Akademii nauk SSSR, no. 1, 1961, 114-115

TEXT: Many branches of physical and technical sciences are interested in the development of theoretical diffraction problems. A certain noncoordination of the theoretical studies has a disturbing effect on their development, which is mainly caused by insufficient scientific information on these studies. It must also be considered that until lately no comprehensive scientific conferences on the theory of wave diffraction have been convened in the USSR or abroad. During the last years the Akusticheskaya komissiya Akademii nauk SSSR (Acoustics Commission of the Academy of Sciences USSR) has tried to improve this condition by establishing special sections at the vsesoyuznyye akusticheskiye konferentsii (All-Union Acoustics Conferences) in 1957 and 1958, where reports were delivered on the diffraction of electromagnetic, acoustic, and elastic waves. A Symposium was held in Odessa from September 26,

Card 1/2

30422

S/058/61/000/009/048/050
Calculation of attenuation ...   A001/A101

calculated ones. Measures were taken preventing origination of reflected waves
and longitudinal sound propagation in the absorber layers. The tests were made
with a loudspeaker and a microphone shifting along the duct axis. The results
obtained testify that the derived formula is applicable to calculation of attenu-
ation up to frequencies of 500-600 cps at the lining with caprone fiber and up
to 800-900 cps at the lining with gravel layer.

                                                          L. Pereverzev

[Abstracter's note: Complete translation]

Card 2/2

30422

S/058/61/000/009/048/050
A001/A101

17.1352

AUTHORS: Malyuzhinets, G.D., Filippova, R.D.

TITLE: Calculation of attenuation of low-frequency sonic waves in straight
             lined ducts

PERIODICAL: Referativnyy zhurnal. Fizika, no. 9, 1961, 291, abstract 9Zh413 (V
             sb. "Prom. aerodinamika", no. 18, Moscow, Oborongiz, 1960, 3 - 11)

TEXT: The authors derive a formula enabling one to determine attenuation
of low-frequency sonic waves in air ducts lined with standard sound-absorbing
materials; method and results of testing are described. The attenuation formula
in decibells per length unit looks as follows: $\Delta L_1 = 8.6 \, (\pi \, f/c) \, (d/b^{1/2})$,
where f is frequency, c is sound velocity, b is the real and d is the imaginary
part of the reduced impedance of the absorbing layer, obtained by calculation or
experimentally. An experimental testing of the theoretical formula was carried
out by direct measuring of attenuation in a rectangular duct one of whose walls
was lined with caprone cotton wool, stitched mats made of cotton "anipirirovannyy"
and gravel layer. The values of the real and imaginary parts of reduced impe-
dance of the absorbing layer were obtained with an interferometer and agreed with

Card 1/2

Development of the Concepts on Diffraction Phenomena (To the 130th Anniversary of Thomas Young's Death)

SOV/53-69-2-7/10

are discussed in detail according to the modern theory. Part 4 finally gives a description of the theoretical treatment of diffraction in the most general sense, i.e. treatment of the mathematical problem of the forced oscillations within a given range. The description partly corresponds to that of I. M. Gel'fand. The diffraction of a plane wave is dealt with according to Sommerfeld. There are 15 figures and 15 references, 12 of which are Soviet.

Card 2/2

24(4)

AUTHOR: Malyuzhinets, G. D.

SOV/53-69-2-7/10

TITLE: Development of the Concepts on Diffraction Phenomena (To the 130th Anniversary of Thomas Young's Death)

PERIODICAL: Uspekhi fizicheskikh nauk, 1959, Vol 69, Nr 2, pp 321-334 (USSR)

ABSTRACT: After a short introduction describing the phenomenon of dif-
fraction in which it is said that the term dates back to
Grimaldi (1665), the author gives a survey of the historical
development of the wave theory of diffraction. Young (1800)
was the first to develop such a theory, which is explained on
the basis of an example, and the fundamental discoveries made
by Fresnel, Helmholz, Kirchhoff, and Fraunhofer are duly men-
tioned. Part 3 of the paper describes the modern development
of Young's diffraction theory. (The contents of this part was
compiled from publications by Leontovich and Fok, as well as
from a lecture delivered by the author at the All-Union Con-
ference on Problems of Electric Oscillations and Waves at
Gor'kiy University (1946).) On the basis of several drawings
Card 1/2   (Figs 5-13) a number of characteristic diffraction examples

On Scattering of Sound Due to Irregularities of the Transition Layer in Seas $SOV/46-5-1-11/24$

      coefficient and the intensity of reverberation are found. The paper
      is entirely theoretical. There are 1 figure and 2 Soviet references.

ASSOCIATION: Akusticheskiy institut AN SSSR, Moskva (Acoustics Institute,
      Academy of Sciences, U.S.S.R., Moscow)

SUBMITTED: January 16, 1958

Card 2/2

TITLE: On Scattering of Sound Due to Irregularities of the Transition Layer
             in Seas (O rasseyanii zvuka, vyzyvayemom nerovnostyami sloya skachka v
             more)

ABSTRACT: In enclosed seas, where deep currents are comparatively weak, a sharp
             discontinuity in the vertical distribution of temperature occurs in
             summer and autumn. A transition layer, called the discontinuity layer,
             separates the upper and lower portions which differ in their density,
             temperature and acoustic refractive index. If this transition layer is
             plane and horizontal, then its effect on propagation of sound in seas
             reduces to certain anomalies in refracted waves.   If the transition
             layer is disturbed, i.e. when gravitational waves are propagated along it,
             then sound is scattered as well as refracted. The present paper gives
             an approximate calculation of such scattering assuming random nature
             of the gravitational waves in the transition layer. The scattering

Card 1/2

Matyuzhinets, G.D

The Excitation, Reflection, and Emission of Surface
Waves on a Wedge With Given Impedances of the Faces

SOV/20-121-3-11/47

ASSOCIATION: Akusticheskiy institut Akademii nauk SSSR (Institute of Acoustics AS USSR)

PRESENTED: April 10, 1958, by V.A.Fok, Academician

SUBMITTED: March 31, 1958

Card 3/3

The Excitation, Reflection, and Emission of Surface
Waves on a Wedge With Given Impedances of the Faces

angles of slide. The author deduces in an abridged
manner the solution of this problem and investigates
a special case where the wave enters under the Brewster
(Bryuster) angle. If it holds that $\operatorname{Re}\vartheta_{\pm} = 0, \operatorname{Im}\vartheta_{\pm} < 0$,
this corresponds to the incidence of undamped surface
waves from infinity. In the case that $\operatorname{Im}\vartheta_{\pm} > 0$, such
waves cannot be considered as surface waves. In the general
case, the solution of the problem of the diffraction of the
above-mentioned plane wave is found in the form of a
Sommerfeld (Zommerfel'd) integral. An integral representation
is then given for the above-mentioned boundary conditions,
and from this integral representation 2 functional
equations are deduced. They are transformed to a simpler
equation the solution of which is given in an explicit
form. The author also discusses some special examples.
There are 2 figures and 5 references, 5 of which are Soviet.

Card 2/3

24(1)
AUTHOR: Malyuzhinets, G. D.

SOV/20-121-3-11/47

TITLE: The Excitation, Reflection, and Emission of Surface Waves on a Wedge With Given Impedances of the Faces (Vozbuzhdeniye, otrazheniye i izlucheniye poverkhnostnykh voln na kline s zadannymi impedantsami grancy)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 121, Nr 3, pp 436 - 439 (USSR)

ABSTRACT: The author assumes that the two-dimensional wave field $p(r, \varphi)$ ($p \sim e^{-i \omega t}$) in the wedge-like region $r > 0$, $-\Phi < \varphi < \Phi$ is described by the equation $\triangle p + k^2 p = 0$ and that this wave field satisfies a homogeneous boundary condition of the third kind $(\partial p / r d \varphi) \pm ik \sin \vartheta_{+} p = 0$ $(\varphi = \pm \Phi)$ on the faces of this wedge. $\vartheta_{\pm} = z_0/z_{\pm}$; $z_0 = \rho c$ denotes the wave resistance of the medium and $z_{\pm}$ — the normal impedances of the faces $\varphi = \pm \Phi$. The constant quantities $\vartheta_{\pm}$ are Brewster's (Bryuster)

Card 1/3

The Connection Between the Reversion Formulas of the   20-119-1-12/52
Sommerfeld Integral and the Formulas of Kontorovich-Lebedev

$$F(r) = \frac{1}{2} \int_{-i\infty}^{i\infty} e^{-\frac{i\nu\pi}{2}} I_{\nu}(kr)\, \omega(\nu)\, \nu\, d\nu$$

$$\omega(\nu) = \int_{0}^{\infty} e^{\frac{i\nu\pi}{2}} H_{\nu}^{(1)}(kr)\, F(r)\, \frac{dr}{r} \ .$$

There are 5 references, 4 of which are Soviet, 1 German.

ASSOCIATION: Akusticheskiy institut Akademii nauk SSSR (Acoustic Institute
              Academy of Sciences USSR)
PRESENTED: September 20, 1957, by M.A.Leontovich, Academician
SUBMITTED: September 5, 1957

Card 2/2

AUTHOR: Malyuzhinets, G.D.

TITLE: The Connection Between the Reversion Formulas of the
Sommerfeld Integral and the Formulas of Kontorovich-Lebedev
(Svyaz' mezhdu formulami obrashcheniya integrala Zommerfel'da
i formulami Kontorovicha-Lebedeva)

20-119-1-12/52

PERIODICAL: Doklady Akademii Nauk, 1958, Vol 119, Nr 1, pp 49-51 (USSR)

ABSTRACT: In an earlier publication Ref 3 the author has already
considered the formulas for the reversion of the Sommerfeld
integral

$$f(\alpha) = \frac{i\,k\,\sin\alpha}{2} \int_{0}^{\infty} F(r)e^{i\,k\,r\,\cos\alpha}dr$$

$$F(r) = \frac{1}{2\pi i} \int_{\gamma} e^{-i\,k\,r\,\cos\alpha}f(\alpha)\,d\alpha.$$

In the present paper he shows that if $F(0)$ and consequently
$f(i\,\infty)$ equals zero, then the transformation of the Sommerfeld
integral can be reduced to the transformation of Kontorovich-
Lebedev [Ref 5], i.e.:

Card 1/2

Conversion Formula for Sommerfeld Integral   20-118.6-13/43

new boundary value problems in wedge-shaped domains. After giving this rather extensive theorem its proof is carried out step by step. Then a second theorem is given and proved. This second problem makes possible the solution of boundary value problems in wedge-shaped domains in the case of existence of derivations of arbitrarily high orders in the boundary conditions, i.e. especially of the problem of diffraction of sound waves at a semi-infinite elastic plate. As the most simple example of the conversion formula detected here the author detects the forced oscillation $S(r, \varphi)$, which satisfies the equation $\Delta S + k^2 S = 0$ in the wedge-shaped domain $-\Phi < \varphi < \Phi$. There are 2 figures and 5 references, 5 of which are Soviet.

ASSOCIATION: Akusticheskiy institut Akademii nauk SSSR (Institute of Acoustics, AS USSR)

PRESENTED: September 20, 1957, by M. A. Leontovich, Member, Academy of Sciences, USSR

SUBMITTED: September 5, 1957

Card 2/2

20-118-6-13/43

AUTHOR: Malyuzhinets, G. D.

TITLE: Conversion Formula for Sommerfeld Integral (Formula obra-
            shcheniya dlya integrala Zommerfel'da)

PERIODICAL: Doklady Akademii Nauk SSSR,1958, Vol.118,Nr 6,pp.1099-1102
            (USSR)

ABSTRACT: Sommerfeld used, as is known, a solution of the form

$$S(r,\varphi) = (1/2\pi i) \int_{\gamma} e^{mr\,\cos\alpha} s(\alpha + \varphi)d\alpha$$

of the two-dimensional wave equation $\Delta S - m^2 S = 0$, $(-\pi/2 \leqslant$
$\leqslant \arg m \leqslant \pi/2)$ for the rigorous investigation of the
diffraction of a plane wave at a wedge under the boundary
conditions $S = 0$ or $\partial S/\partial n = 0$. A systematic method re-
cently suggested by the author of this paper (Ref 2) for
the detection of the functions $s(\alpha)$ permitted the solu-
tion of the same diffraction problem for the boundary
conditions $\partial S/\partial n + hS = 0$. The first theorem given here
and proved permits the detection of the solution of some

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    Reverberation. (Survey)

AVAILABLE: Library of Congress (QC 221.V83)

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                                                        6-17-59

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    and Ultrasonic Shear and Volumetric Relaxation

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Abstracts of Reports at the Fourth All-Union (Cont.)   SOV/1627

The book has no Table of Contents, but contains the following sections:

PLENARY SESSIONS

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Malyuzhinets, G.D. Transverse Diffusion of the Amplitude in Diffraction,   3
    Propagation, and Reflection of Waves

Isakovich, M. A. Some Problems of Statistical Acoustics   5

Ingard, Uno. USA. Propagation of Sound in the Atmosphere   5

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    Indoors

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MALYUZHINETS, G. D.

24(1)   PHASE I BOOK EXPLOITATION   SOV/1627

Vsesoyuznaya akusticheskaya konferentsiya. 4th, Moscow, 1958

Referaty dokladov   (Abstracts of Reports at the Fourth All-Union Acoustical Con-
    ference) Pt. 2.   Moscow, Akad. nauk SSSR, 1958.   44 p.   Number of copies printed
    not given.

Sponsoring Agency: Akademiya nauk SSSR.

Resp. Ed.: L.M. Brekhovskikh, Corresponding Member, USSR Academy of Sciences.

PURPOSE: These abstracts are intended for scientists and engineers interested in
    acoustics.

COVERAGE: This is a mimeographed collection of brief abstracts of papers presented
    at the Fourth All-Union Acoustical Conference.   The subjects covered are propag-
    ation of sound in nonhomogeneous media, nonlinear acoustics, ultrasonics,
    acoustic measurements, electroacoustics and architectural and structural acoustics.

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MALYUZHINETS, G. D.

"Lateral Amplitude Diffusion in Wave Diffraction Propagation and Reflection"

paper presented at the 4th All- Union Acoustics Conference, Moscow, 26 May -4 June 1958.

MALYUZHINETS, G. D.

"Approximate Investigation of Wave Field Near a Randomly Irregular Surface."

Paper presented at the 4th All-Union Conf. on Appl Acoustics, Moscow, 26 May -2Jun 58.

MALYUZHINETS, G. D.

"Exact Solution of Plane Wave Diffraction Problem on a Half-Infinite Elastic Plate."

paper presented at the 4th All-Union Conf. on Acoustics, Moscow, 26 May - 2 Jun 58.

MALYUZHINETS, G.D.

MALYUZHINETS, G.D.; YUDIN, Ye.Ya.

Calculating the equalization of pressure through a porous screen.
Prom.aerodin. no.9:109-112 '57.   (MIRA 10:12)
                              (Soundproofing)

MALYUZHINETS, G.D.

4925. SOUND RADIATION BY THE OSCILLATORY FACES 534.232
OF AN ARBITRARY WEDGE, II. G.D. Malyuzhinets.
Akust. Zh., Vol. 1, No. 3, 226-34 (1955) in Russian.
Using the exact solution obtained already for the sound
pressure brought about by the oscillation of the faces of a
wedge, it is shown that the rib has no effect on the radiated
sound power which is exactly determinable by rules of geo-
metric acoustics.
C.R.S. Manders

Malyuzhinets, G.D.

4924. SOUND RADIATION BY THE OSCILLATORY FACES
OF AN ARBITRARY WEDGE. I. G.D. Malyuzhinets,
Akust. Zh., Vol. 1, No. 2, 144-64 (1955), in Russian.

534.232

Using the Sommerfeld integral, an exact solution is ob-
tained in a wedge-shaped region for the acoustic pressure field
which is caused by the oscillations of the faces. The case is
examined in greater detail when the oscillation velocity at each
of the two faces is constant. A connection is pointed out be-
tween solutions of the given problem and the problem of dif-
fraction at a solid wedge.

C.H.S. Manders

Acoustic Inst., AS USSR, Moscow
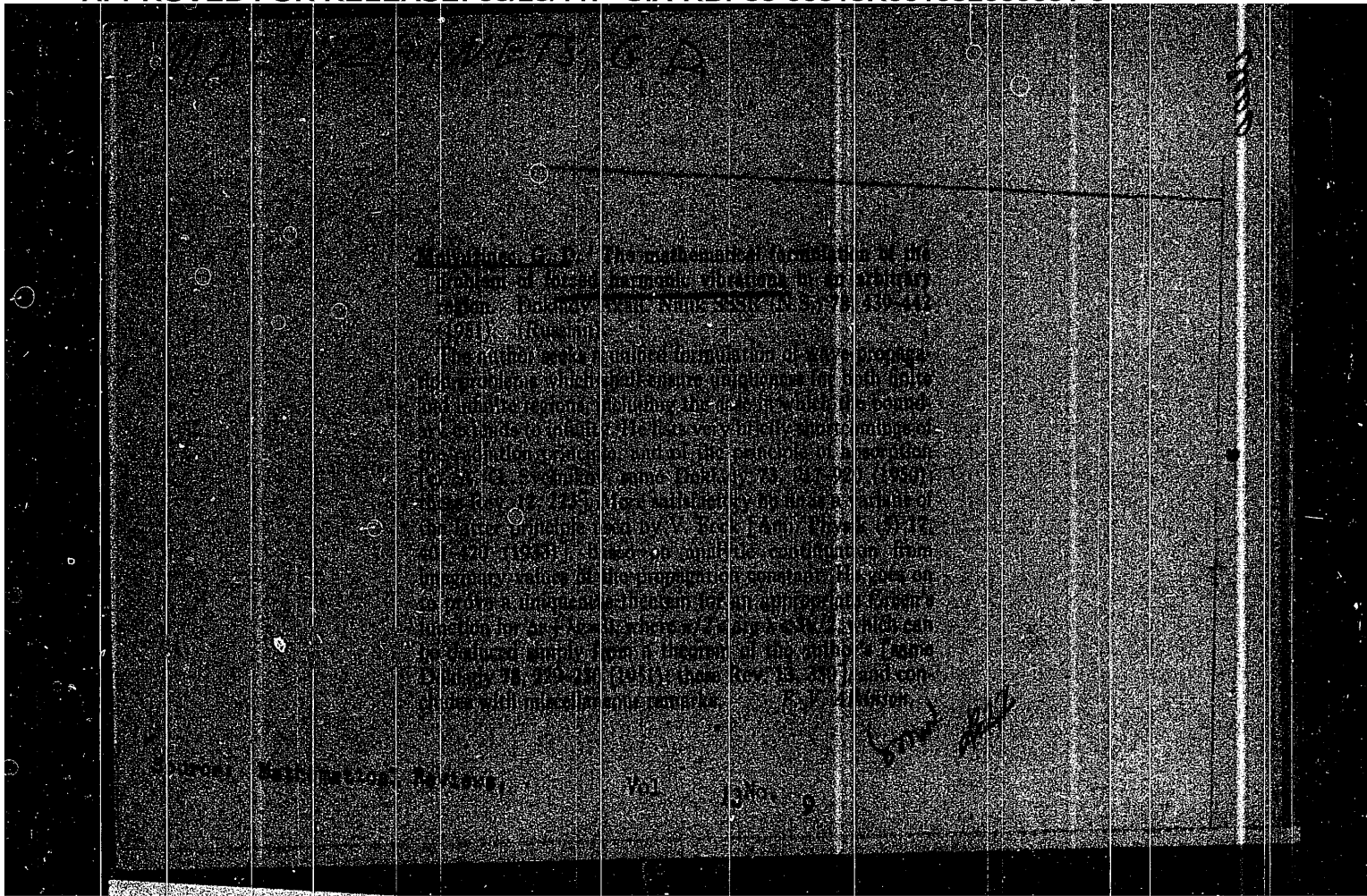
MALYUZHINETS, G. D.

USSR/Physics - Optics, Focus

11 May 51

"Focusing in an Absorbing Medium," G. D. Malyuzhinets

"Dok Ak Nauk SSSR" Vol LXXVIII, No 2, pp 229, 230

If one defines focus as the point where the modulus
of the function describing the wave field possesses
a max, then one can pose the following problem: For
what complex values of the wave number is the possi-
bility of focusing absent? The author answers this
question in a theorem, which he states and then demon-
strates. Submitted by Acad V. A. Fok 12 Mar 51.

222T67

MALYUZHINETS G. D.

PA 149T98

USSR/Physics - Wave Diffraction   Aug 51

"Remark on Principle of Emission Radiation," G. D.
Malyuzhinets

"Zhur Tekh Fiz" Vol XXI, No 8, pp 940-942

Formula of diffraction of sinusoidal waves re-
quires outgoing waves in the infinite field.
Purpose here is to show that this requirement is
not universal and in case of some media may
change into condition of incoming waves at the
infinite field. Submitted 31 Jan 51.

194T98

MALYUZHINETS G. A.

PA 149T92

USSR/Physics - Wave Propagation   Aug 51

"Principle of Extinguishing and Problem of Forced
Oscillations in an Arbitrary Region," G. A.
Malyuzhinets

"Zhur Tekh Fiz" Vol XXI, No 8, pp 881-885

Eqs can be derived only in the case if lambda λ
does not coincide with its boundary value $\lambda \nu$.
If equal, $\lambda = \lambda \nu$, an addnl condition is neces-
sary. The principle of radiation frequently
applied in this case is difficult to express

194T92

USSR/Physics - Wave Propagation (Contd)   Aug 51

mathematically. Author suggests the formulation
of a principle of extinguishment for the scalar
field discussed herein. Submitted 31 Jan 51.

194T92

MALYUZHINTS, G. D.
    "Some Generalizations of the Method of Representation in the Theory of
Diffraction of Sinusoidal Waves." Sub 14 May 51, Physics Inst imeni P. N. Lebedev,
Acad Sci USSR.

    Dissertations presented for science and engineering degrees in Moscow
during 1951.

SO: Sum. No. 480, 9 May 55.

MALYUZHINETS, G. D.

PA 77T97

USSR/Physics
    Wave Mechanics
    Wave Analysis

Apr 1948

"On One Generalization of the Weil Formula for the
Wave Field Under an Absorbing Flame," G. D. Malyu-
zhinets, Phys Inst imeni P. N. Lebedev, Acad Sci
USSR, 4 pp

"Dok Ak Nauk SSSR" Vol IX, No 3 $p347-70$

Description of scalar wave field $u(x,y,z)$ on an ab-
sorbing plane $z=0$, which is produced by sources
distributed along a semispace $z>0$. Submitted by
Acad S. I. Vavilov 4 Mar 1948.

77T97

MALYUZHINETS, G.D.

S.A.

641.374.44   1793

On the dependence between the amplitude characteristic and the characteristic of a non-linear element. MALYUZHINETS, G.D. C.R. Acad. Sci. URSS, 54 (No. 5) 491-3 (1946).—A situation is considered in which the frequency characteristic of the non-linear element is a straight line and there is a unique relation between instantaneous values of voltage and current at the input and output. The effect of a specified amplitude characteristic upon the distorting characteristic is considered. Various examples are given, the result involving the solution of an integral equation.   L. S. O.

ASM-SLA   METALLURGICAL LITERATURE CLASSIFICATION

MALYUZHINETS G-D

5A

A 53
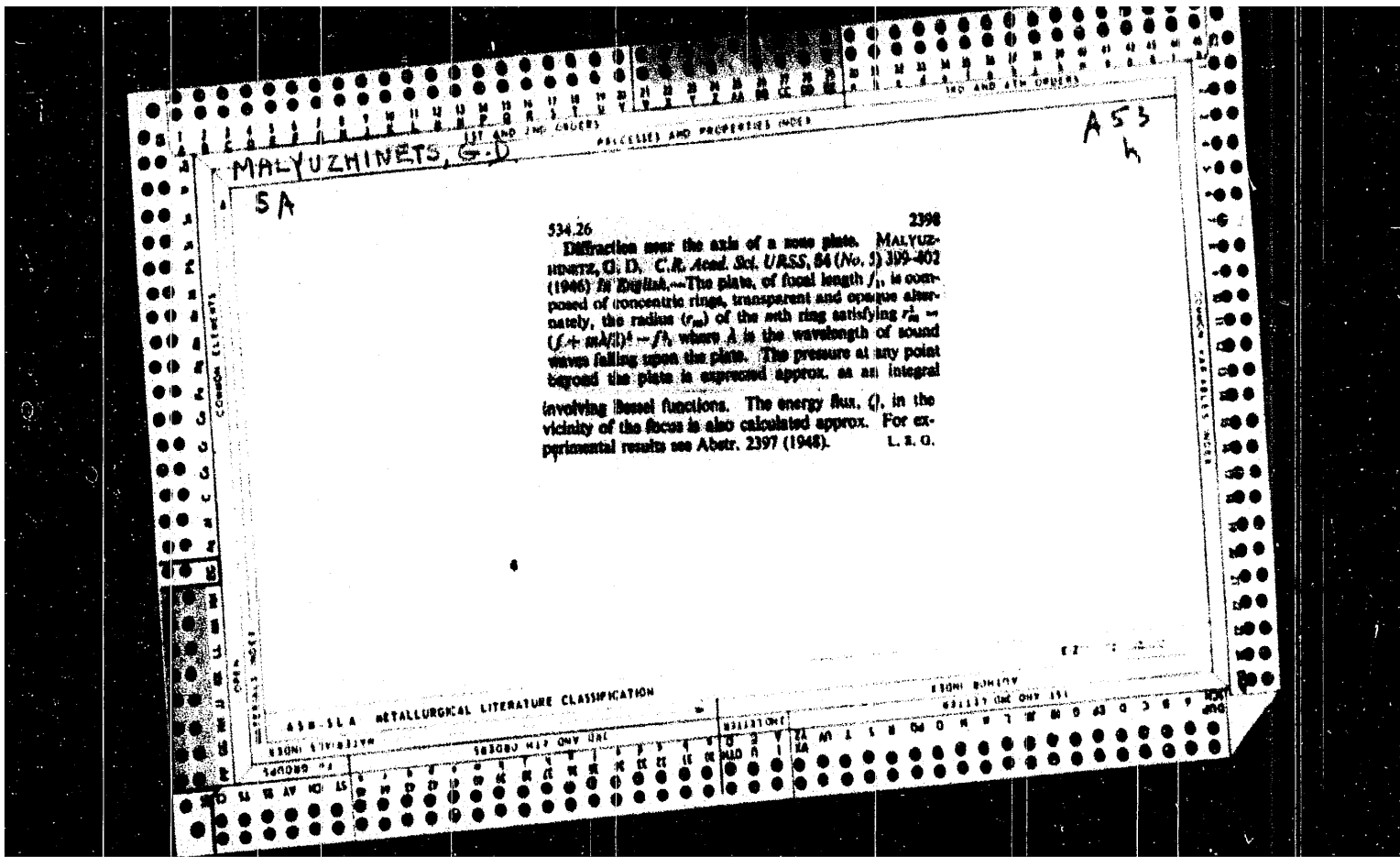
534.26   2398

Diffraction near the axis of a zone plate. MALYUZHINETZ, G. D. C.R. Acad. Sci. URSS, 64 (No. 5) 399-402 (1946) In English.—The plate, of focal length f_1, is composed of concentric rings, transparent and opaque alternately, the radius (r_m) of the mth ring satisfying $r_m^2 = (f_1 + m\lambda/l)^2 - f_1^2$, where λ is the wavelength of sound waves falling upon the plate. The pressure at any point beyond the plate is expressed approx. as an integral involving Bessel functions. The energy flux, (f), in the vicinity of the focus is also calculated approx. For experimental results see Abstr. 2397 (1948).   L. S. G.

MALYUZHENKO, A.I., inzh.

New designs and technology of casting supporting tractor rollers.
Trakt. i sel'khozmash. 31 no.12:35-36 D '61. (MIRA 15:1)
(Tractors--Equipment and supplies)

MALYUTOV, Midkhat Rakhmatullich; BERKOVICH, Mikhail Yakovlevich;
DYUKOV, L.M., red.

[Methods of correcting unsatisfactory cementing during
oil well drilling] Metody ispravleniia neudachnykh tse-
mentirovanii pri burenii skvazhin. Moskva, Nedra, 1965.
107 p.   (MIRA 18:12)

MALYUTOV, M.B.

Brownian movement with reflection and the problem with the inclined
derivative. Dokl. AN SSSR 156 no.6:1285-1287 Je '64.

(MIRA 17:8)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
Predstavleno akademikom A.N. Kolmogorovym.

DYNKIN, Ye.B.; MALYUTOV, M.B.

Random wandering on groups having a finite number of generatrices.
Dokl.AN SSSR 137 no.5:1042-1045 Ap '61. (MIRA 14:4)

1. Moskovskiy gosudarstvennyy universitet im.M.V.Lomonosova. Pred-
stavleno akademikom A.N.Kolmogorovym.
(Groups, Theory of) (Harmonic fuotioqs)

MALYUTKOVA, I.V.

Effect of small doses of x-rays on extinctive inhibition in
mice. Trudy LSGMI 44:342-349 '58   (MIRA 11:12)

1. Kafedra normal'noy fiziologii (zav. kafedroy - prof. Yu.M.
Uflyand) i Kafedra rentgenologii i radiologii (zav. kafedroy -
prof. B.M. Shtern) Leningradskogo sanitarno-gigiyenicheskogo meditsinsko-
go instituta.
        (LEARNING,
            eff. of x-rays in small dos. on extinctive inhib.
            in mice (Rus))
        (ROENTGEN RAYS, eff.
            small dos. on extinctive inhib. in mice (Rus))

KIRICHENKO, N. I., kand. geologo-mineralogicheskikh nauk;
DANIYELYAN, Yu. T., inzh.: MALYUTKIN, B. V., inzh.

Deformation of characteristics of Chirkey limestones.
Gidr. stroi. 33 no.12:18-22 D '62.   (MIRA 16:1)

(Chirkey Hydroelectric Power Station—Limestone—Testing)

SAVCHENKOV, A.F.; MALYUTINA, Z.D.

Ammonia liquor, a valuable fertilizer for the northwestern zone
of the U.S.S.R. Trudy LIEI no. 46:20-26 '63. (MIRA 17:6)

MALYUTINA, Z.A.

Stratigraphy of Jurassic sediments in the intermountain trough in
the Or' Valley protion of the Urals. Trudy Gor.geol.inst.UFAN SSSR
no.6:91-102 '60.   (MIRA 14:10)
                    (Or' Valley--Geology, Stratigraphic)

MALYUTINA, Z. A., Cand G olog-Mineralog Sci (diss) -- "Jurassic coal-bearing deposits of the Orsk Urals". Sverdlovsk-Chelyabinsk, 1960. 18 pp (Acad Sci USSR, Ural Affiliate), 150 copies (KL, No 14, 1960, 129)

SOV/11-59-8-7/17

On the Question of Seggregating the Mamyt Suite in Jurassic Continental Deposits on the Eastern Slope of the Southern Urals

5 Soviet references.

ASSOCIATION: Chelyabinskiy geologorazvedochnyy trest (Chelyabinsk Geological Prospecting Trust)

SUBMITTED: June 21, 1958

Card 5/5

On the Question of Seggregating the Mamyt Suite in Jurassic Continental Deposits on the Eastern Slope of the Southern Urals

floral remains of the Mamyt suite, collected by R.Z. Genkina, show that there were many more varieties of plants than in the Khaybulino suite, which also indicates a sharp change in climatic conditions. The author gives a detailed description of the tectonic structures of both suites and their lithological and paleontological characteristics. The Ziren-Agach suite which overlies the Mamyt suite belongs to a new sedimentation cycle connected with the elevation of the Paleozoic substratum in the northern part of the Orsk depression. It is composed of conglomerates and of coarse-grained sands. Its flora is very poor. The pollen and spore analysis made by Ye.N. Silina indicates that the Ziren-Agach belongs to the upper part

Card 4/5   of the Middle-Jurassic period. There is 1 map and

SOV/11-59-8-7/17

On the Question of Seggregating the Mamyt Suite in Jurassic Continental Deposits on the Eastern Slope of the Southern Urals

suites: the Khaybulino, the Mamyt and the Ziren-Agach suites. The Khaybulino suite is associated with siderite - argillaceous iron and brown coal deposits. By the remains of flora and by numerous spores and pollens, identified by L.M. Krechetovich, the age of this suite was fixed to the time of the Aalenian stage of the Middle Jurassic period. The Mamyt suite, named so by the author, is a local subdivision of the Orsk series of continental deposits for the whole internal Orsk depression. Both these suites belong to the same l i m n i c mesocycle forming two rhythmic cycles, but, whereas the Khaybulino suite is associated with a transgression sedimentation cycle, the Mamyt suite is characterized by a slowed down process of sinking, and the correlation of its facies is quite different from that of the Khaybulino suite. It includes whole horizons of brown coals and, from an industrial viewpoint, is the main coal bearing suite of the Basin. Its average thickness is 110 m. Numerous

Card 3/5

On the Question of Seggregating the Mamyt Suite in Jurassic Con-
tinental Deposits on the Eastern Slope of the Southern Urals

synclinorium. It includes many parts of the syncli-
norium complicated by tectonic movements and forms a
series of smaller depressions. The Jurassic conti-
nental deposits of the internal depression (northern
part) were for the first time studied by A.L. Yanshin
and P.L. Bezrukov and by a group of geologists of the
Tsentral'nyy nauchno-issledovatel'skiy geologorazve-
dochnyy institut (Central Scientific Research Geolo-
gical Prospecting Institute) under the leadership of
N.K. Razumovskiy. A.L. Yanshin made the first stra-
tigraphic division of these deposits into 2 suites and
called them, from the bottom to the top, the Khaybulino
and Ziren-Agach suites. In connection with later dis-
covery of deposits of brown coals of the so-called
"Orsk Basin" the region was again thoroughly prospected
and numerous drillings were made. The study of the
core-samples permitted the author to make a more pre-
cise stratigraphic division of deposits of the internal
Card 2/5   depression. She divided the whole Orsk series into 3

3(5)   SOV/11-59-8- 7/17

AUTHOR: Malyutina, Z.A.

TITLE: On the Question of Seggregating the Mamyt Suite in
               Jurassic Continental Deposits on the Eastern Slope of
               the Southern Urals

ABSTRACT: · Jurassic continental deposits are widely spread on the
               eastern slope of the Southern Urals between $50°12'$ -
               $52°15'$ northern latitude and $58°0'$ - $59°10'$ eastern
               longitude. This region includes the extreme south-
               eastern part of the Bashkirskaya ASSR, the eastern
               part of the Orenburgskaya Oblast' and the extreme
               north-western part of the Aktyubinskaya Oblast'
               (Kazakhskaya SSR) and is called in literature "Orsk
               Urals". The whole region can be considered as an in-
               ternal depression according to V.V. Belousov, and is
Card 1/5   associated with the southern sagging of the Magnitorsk

15-57-10-14420

The Stratigraphy and Lithology of the Coal-Bearing (Cont.)

carbonate clays with layers of siltstones, fine-grained sands, and sandstones (beds I, II, III). Petrographically the coals are durain-clarain and clarain-durain. They contain 17.9 to 28.2 percent ash, 31.6 to 34.6 percent volatiles, and 0.6 to 1.2 total sulfur. The calorific value ranges from 4380 to 4980 large calories. The rocks of the coal-bearing series belong to the following facies: 1) channel; 2) mixed; 3) stagnant-water and flood-plain; and 4) swampy. The swampy facies is further subdivided into: 1) relatively mobile swamps; 2) relatively stagnant swamps; and 3) swampy alluvial plains.

Card 2/2

Z. V. Timofeyeva

15-57-10-14420

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 10,
                   p 174 (USSR)

AUTHOR: Malyutina, Z. A.

TITLE;   The Stratigraphy and Lithology of the Coal-Bearing
              Beds of the Eastern Ural Brown-Coal Deposit (Strati-
              grafiya i litologiya uglenosnoy tolshchi vostochnoural'-
              skogo burougol'hogo mestorozhdeniya)

PERIODICAL: Tr. Labor. geol. uglya AN SSSR, 1956, Nr 6, pp 465-472

ABSTRACT: This deposit is situated in the southern part of the
              Orsk depression and is of the fresh-water, platform
              type. Studies of spores, pollens, and plant remains
              indicate that the coal-bearing beds are Bathonian in
              age. The rocks are divided into two subseries according
              to the proportion of coal in them. These are called:
              1) the productive (J_2^{I-II}), characterized principally by
              clays, with subordinate sands, silts, and coal seams
              (beds IV, V, VI. VII, VIII, IX, and X) and 2) the low-
Card 1/2   producing subseries (J_2^{I-I}), composed of sandy mica-

CHEREVKA, P.P.; MALYUTINA, T.Z.; KOSTIK, N.I.; BYK, I.I.; MIKITYUK, L.P.;
    KISELEVA, M.I.

Analyzing the composition of high-boiling hydrocarbons in the gases
of the oxidative pyrolysis of methane. Khim. prom. 40 no.8:582-585
Ag '64.
                                                            (MIRA 18:4)

L 11376-67

ACC NR: AT6036497

O

tons. Ionization chambers were used to monitor the flux. Experiments were conducted with diploid Saccharomyces vini yeast cells (Megri 139—13 strain) and haploid Saccharomyces cerevisiae yeast cells (strain 40—2587). Most of the studies were conducted with 660-Mev protons and the diploid strain. The following tests of yeast radiosensitivity were used: 1) inacti-vation of macrocolonies and of different types of microcolonies, 2) dis-ruption of the cell division rate in the first five cycles after the beginning of irradiation, 3) dispersion of different types of microcolonies, 4) post-radiation recovery, and 5) lysis of cells. Dose-damage relationships in a range from 1—120 rad were established for each index. Experimental re-sults indicate that the effect of proton irradiation is essentially the same as gamma irradiation; thus the RBE for protons in these experiments was close to one. Evaluation of these data considering the different linear energy losses of the types of radiation used made possible a preliminary estimate of the radiosensitivity of quiescent yeast cells in spaceflight con-ditions. This is necessary as yeast may be used as a back-up system for spaceflight life support, if the system of continuous cultivation of heterotrophs stops working. [W.A. No. 22; ATD Report 66-116]

SUB CODE: 06 / SUBM DATE: 00May66

Card 2/2   egk

L 11376-67   EWT(1)   SCTB   DD/GD
ACC NR: AT6036497

AUTHOR: Benevolinskiy, V. N.; Druzhinin, Yu. P.; Klimenko, A. S.; Malyutina, T. S.;
Sychkov, I. A.

ORG: none

TITLE: The effect of gamma irradiation and irradiation with protons with energies of
600 to 127 Mev on the radiosensitivity of yeast cells [Paper presented at the
Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy
kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii,
Moscow, 1966, 63-64

TOPIC TAGS: cosmic radiation biologic effect, proton radiation biologic effect,
ionizing radiation biologic effect, relative biologic efficiency, life support
system, space food, radiation induced mutuation, yeast

ABSTRACT: Yeast cells are a convenient object for space research because, in
addition to serving as a model system, they may someday be used as a
heterotrophic link in a spaceflight life-support system. The vulnerability
of the cell division process in yeast cells irradiated in the quiescent state
was studied. A water suspension of yeast was irradiated with 660-, 510-,
240- and 127-Mev protons from an OIYAI synchrocyclotron, and their RBE
was determined in comparison with Co^{60} gamma rays (from an EGO-4
apparatus). Irradiation with 660-Mev protons was conducted through a
polyethylene and lead filter. The activation method of dosimetry was used
for 660-Mev protons, and the luminescent method for lower-energy pro-

Card 1/2

MALYUTINA, T.M.; TRAMM, R.S.; PEVZNER, K.S.

Differential spectrophotometric determination of titanium with diantipyrylmethane. Zav.lab. 31 no.9:1054-1057 '65. (MIRA 18:10)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti.

Determination of niobium by the ...

S/032/62/028/005/001/009
B117/B101

There is 1 table.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy
institut redkometallicheskoy promyshlennosti (State Design
and Planning Scientific Research Institute of the Rare Metal
Industry)

Card 2/2

S/032/62/028/005/001/009
B117/B101

AUTHORS: Malyutina, T. M., Futoryanskaya, Ye. L., and Vinokurova, F. A.

TITLE: Determination of niobium by the spectrophotometric differential
              method

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 5, 1962, 540 - 542

TEXT: The method recommended as the most convenient for niobium determina-
tion, is based on measuring the optical density of the yellow niobium
complex with thiocyanic acid in an homogeneous acetone medium. The optimum
concentration of the zero solution is limited by the slit width of the
$C\phi-4$ (SF-4) spectrophotometer and was experimentally found to be 0.75 mg
of Nb_2O_5 in 50 ml (slit width = 1.5 mm). A red light filter $Y\Phi(-2$ (UFS-2)
had to be fitted to prevent diffuse light from affecting the measurement
results at λ = 390 mμ. The method was used to determine commercial niobium
pentoxide, potassium fluoroniobate and the niobates of barium and lead and
gave results within 0.5 - 1% of the values obtained by gravimetric analysis.

Card 1/2

Neodymium determination by...

25352
S/032/61/027/006/003/018
B124/B203

The optical density of the test solution is measured with respect to the comparison solution containing 150 mg of Nd_2O_3. The Nd concentration C_x is calculated from the equation $C_x = C_o + D_x \cdot F$, where C_o is the Nd concentration in the comparison solution, D_x the optical density, and F the factor. There are 1 figure, 4 tables, and 4 references: 1 Soviet-bloc and 3 non-Soviet-bloc. The three references to English-language publications read as follows: D. C. Stewart, D. Kato, Anal. Chem., 2, 164 (1958); C. V. Banks, J. Z. Spooner, J. W. O'Zaughlin. Anal. Chem., 30, 40 (1), 458 (1958); C. V. Banks, J. Z. Spooner, J. W. O'Zaughlin. Anal. Chem., 12, 18, 94 (1954))

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy insti-
               tut redkometallicheskoy promyshlennosti (State Design and
               Planning Scientific Research Institute of the Rare Metals
               Industry)

Card 3/7

25352
S/032/61/027/006/004/018
B124/B203

Neodymium determination by...

of 0.1 mm, well reproducible results are obtained, and the proportionality
between optical density and concentration holds for the range of from 150 to
250 mg Nd_2O_3 in 25 ml. Rectangular cuvettes with a layer thickness of 50 mm
were used for the measurements. The measured results (Table 1) did not
deviate from the mean value by more than ± 1%. In the neodymium determi-
nation, the neighboring colored elements may disturb, which, first of all,
applies to praseodymium, whereas the effect of lanthanum and samarium is low
(Table 2). The method tested on pure solutions of neodymium and other rare
earths was used to determine the neodymium content in neodymium oxide pre-
parations of varying degree of purity; results obtained under the super-
vision of S. M. Polyakov are given in Table 3. The method was also used
for determining neodymium in Mg-Nd alloys with 15-55% Nd and 45-85% Mg;
magnesium did not disturb the neodymium determination. The value of the
constant factor was calculated from the equation $F = \Delta C/D$, where
$\Delta C = C_1 - C_0$ (C_0 is the concentration of the comparison solution, C_1 the
concentration of the solution containing 175-250 mg of Nd_2O_3, and D is the
optical density corresponding to the difference of two concentrations).

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25352
S/032/61/027/006/003/018
B124/B203

5.5310

AUTHORS: Malyutina, T. M., Dobkina, B. M., and Chernikhov, Yu. A.

TITLE: Neodymium determination by the differential spectroscopic method

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 6, 1961, 653 - 656

TEXT: The differential spectroscopic determination of neodymium was made with the Soviet spectrophotometer type $C\Phi-4$ (SF-4). For the spectrophotometric Nd determination, the absorption band at 575 $m\mu$ is generally used where the maximum lies in perchlorate and nitrate solutions according to the authors' data. In the practice, the use of nitric acid is more convenient than that of perchloric acid as has been suggested in publications. For an accurate determination of the maximum, it is necessary to use sufficiently monochromatic light, i.e., a slit width as narrow as possible. To eliminate the effect of scattered light, the $CO-14$ (OS-14) light filter was used at 575 $m\mu$. A concentration of 150 mg Nd_2O_3 in 25 ml was used for the comparison solution. With the use of an OS-14 light filter and a slit width

Card 1/7

S/032/61/027/006/002/018
B124/B204

Titanium determination...

publications read as follows: R. Gundesde Carwalho. Anal. Chem, 30, 6, 1124 (1958); G. W. Milner. P. Pnounah, Analyst, 79, 414 (1954); W. T. L. Neal, Analyst, 79, 403 (1954); C. F. Hiskey. J. G. Joung. Anal. Chem., 23, 1196 (1951).

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut redkometallicheskoy promyshlennosti (State Design and Planning Scientific Research Institute of the Rare Metals Industry)

Card 4/6

Titanium determination...

in sulfuric acid in the presence of H_2O_2. A maximum of 0.1 % of TiO_2 was found in the insoluble rest. The results obtained by the method suggested and the volumetric method showed very good agreement. The optical density of the solution investigated is measured by comparison with a comparison solution containing 12 mg of Ti/100 ml, and the titanium content in the aliquot portion of the solution is calculated from the equation $C_x = D_x \cdot F + C_0$, where C_x is the Ti concentration in the solution investigated, D_x its optical density, and $F = (C - C_0)/D_{mean}$ (C is the Ti content in the solution investigated, C_0 equal to 12 mg/100 ml, and D the instrument reading) is the factor. The authors measured at 390 mμ with a УФС-2 (UFS-2) filter and constant slit width. Instead of the calculation from the equation, it is also possible to use a calibration curve for the dependence of optical density on concentration. If the product analyzed contains little iron, the addition of H_3PO_4 may be omitted.

There are 1 figure, 3 tables, and 7 references: 2 Soviet-bloc and 7 non-Soviet-bloc. The four most recent references to English-language

Card 3/6

S/032/61/027/006/002/018
B124/B203

Titanium determination...

35 % Fe; therefore phosphoric acid is added in high excess to block the iron. The color intensity of the titanium complex is reduced by the presence of phosphoric acid. The absorption maximum of the titanium complex shifts, in the presence of H_3PO_4, toward shorter wavelength of the spectrum, which suggests the formation of a complex of varying composition. With the chosen wavelength of 390 mμ, the optical density of the titanium peroxy compound only differs by about 0.5 % in the presence or absence of H_3PO_4. Table 1 gives data of the dependence of optical density on the titanium concentration in the presence of H_3PO_4. A solution with 12 mg of Ti in 100 ml was used as comparison solution. In the range of from 12 to 18 mg of Ti/100 ml, the optical density is proportional to the concentration; the error of determination is about 0.5 %. The effect of iron was tested on artificial mixtures. The determination results for titanium without addition of H_3PO_4 were elevated, which was corrected by the addition of H_3PO_4 (Table 2). The ilmenite concentrates were decomposed by melting with potassium pyro-sulfate. the melt was dissolved

Card 2/6

AUTHORS: Malyutina, T. M., and Dobkina, B. M.

TITLE: Titanium determination in ilmenite concentrates by the
              differential spectrophotometric method

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 6, 1961, 650 - 652

TEXT: The differential method (Ref. 1: C. F. Hiskey. Anal. Chem., 21,
1440 (1949); Ref. 2: C. F. Hiskey, J. G. Young Anal. Chem., 23, 1196
(1951)) is based on the use of a solution containing the required element
in elevated, known concentration and all reagents added for the analytical
reaction as a comparison solution; the ratio between the concentration
of such a comparison solution and the solution investigated should be
near one. The differential spectrophotometric method described in
publications (see below) for determining Ti by its reaction with hydrogen
peroxide in sulfuric acid was used by the authors (Ref. 7: B. M. Dobkina
and T. M. Malyutina. Informatsiya Giredmeta, 10, 49 (1959)) in the analysis
of titanium-containing slags and titanium rhenium alloys. Ilmenite
concentrates contain, in contrast to titanium-containing slags, about

Card 1/6

MALYUTINA, T.M.; DOBKINA, B.M.; CHERNIKHOV, Yu.A.

Determination of rhenium by the differential spectrophotometric
method. Zav.lab. 26 no.3:259-263 '60. (MIRA 13:6)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proektnyy institut
redkometallicheskoy promyshlennosti.
(Rhenium--Analysis)

MALYUTINA, T.M.

SOV/75-14-4-30/30

AUTHOR: Klimovich, G. B.

TITLE: Section of Analytical Chemistry of the VIII Mendeleyev
Congress on General and Applied Chemistry

PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, Nr 4, pp 511-512
(USSR)

ABSTRACT: Approximately 300 persons participated in the work of the
Department of Analytical Chemistry, among them representatives
of various scientific research institutes, higher schools and
industrial enterprises in Russia, scientists from China,
Bulgaria, the CSR, Poland, Hungary, and Italy. Approximately 70
reports were heard. In his opening speech I. P. Alimarin reported
on the achieved results and on modern problems of analytical
chemistry. I. V. Tananayev reported on the application of physico-
chemical analysis in heterogeneous systems for the solution of a
series of problems of analytical chemistry. V. I. Kuznetsov
reported on modern aims in the use of organic reagents.
A. K. Babko showed at the example of halide and thiocyanate
complexes the correlation between the stability of complexes and
the position of the corresponding central atoms in the periodic
system. L. M. Pachkova and Yu. A. Bochkova lectured on the stability
of oxinates of Cu, Co, and Ni as depending on the structure of
the oxime molecule. N. P. Komarova lectured on the double
character of reaction of some compounds in the formation of
complexes. The problem of the application of heteropolyacids in
analytical chemistry was dealt with in the lecture of
Z. F. Shakhova and co-workers, and A. I. Kokorin and M. A.
Bolshova. A large number of lectures dealt with the use of
new organic reagents in analysis: A. I. Busev and M. I. Ivanyutin
reported on the application of dialkyl and diaryl dithio-
phosphoric acid for the separation of elements. A. I. Busev used
aryl arsonic acid and aryl phosphinic acid. R. P. Lastovskiy and
his co-workers treated some properties of new complexons. The
lecture of V. A. Nazarenko, G. G. Shitareva and L. I. Kononenko
dealt with the photometric determination of a series of elements
using fluoride derivates. A. I. Cherkesov lectured on the use of
halochromation in analytical chemistry. B. M. Dobkina and I. M.
Malyutina lectured on the determination of tantalum using
differential spectrophotometry. In I. V. Morachevskiy and I. A.
Stolyarov reported on new highly sensitive analysis methods
using an ultraviolet microscope. Several lectures dealt with
methodical and theoretical problems of spectrum analysis
(N. P. Zakharin and G. A. Sharnin; E. I. Parunshtarn and
co-workers). N. S. Poluektov and M. N. Nikonova treated the
perfection of flame photometry. Several lectures dealt with the
determination of elements by polarography (S. I. Sinyakova;
L. D. Bolidsaltynskaya and I. A. Tarovoy; Ya. P. Gokhshteyn). New
results in using fixed electrodes were reported by I. B.
Zachenko and Yu. S. Lyalikov and co-workers. The lecture of
N. I. Udaltsova and P. P. Fadey treated the use of asperometric
titration with two electrodes in the chemistry of uranium and
thorium. M. M. Senyavin showed possibilities of predicting the
conditions of chromatographic separation of elements based on
their position in the periodic system. T. A. Belyavskaya reported
on the use of ion exchange in the investigation of the state of
substances in solutions. A. S. Vernidub and V. I. Petrashen'
lectured on the chromatographic separation of a series of
elements. E. C. Polyanskiy reported on adapting the properties
of ion exchanger resins. T. N. Chernyakin and associates reported
on the chromatographic proof of sulfanilamide preparations in
liquids of the organism. G. L. Starobinets and associates treated
the application of high polymers in chromatographic analysis.
The lecture of A. A. Zhukhovitskiy and M. K. Markel'saub, G. Chay
with gas chromatography. Several lectures treated the use of
radioactive isotopes for the chromatographic investigation of
complex formation (N. A. Rybakikov and associates), for the
investigation of the co-precipitation mechanism of ions of rare
metals with sulfides (N. A. Andrey) and for determining rare
elements by means of isotope dilution (I. P. Alimarin, I. M.
Kulimovich). In the field of elementary organic microanalysis
the lectures of N. G. Kaznina, M. P. Dolgan and V. A. Klimova with
associates have to be mentioned, who treated the elaboration of
rapid micromethods for the simultaneous determination of several
elements from one weighed portion of boron, fluorine and
silicium-organic compounds.

Card 1/4

Card 2/4

Card 3/4

The Determination of Tantalum by Differential Spectrophotometry   SOV/32-24-11-8/37

1:6 the relative error in the tantalum determination is about
0.5%. Tantalum concentrates, with number No.1 containing about
4% TiO_2 and about 25% Nb_2O_5, and Nos. 2 and 3 containing about
2% TiO_2 and about 15% Nb_2O_5, were analyzed. A Cф4 spectro-
photometer was used at a wave-length of 325 mμ. The tantalum
content was calculated using the equation:
$C_x = D_x \cdot F + C_o$ (F=0.666).
There are 5 tables and 25 references, 1 of which is Soviet.

ASSOCIATION: Gosudarstvennyy nauchno-issledovatel'skiy institut redkikh i
malykh metallov (State Scientific Research Institute for Rare
and Trace Metals)

Card 3/3