1. SOLOV'YEV, . .

2. USSR (600)

4. Irrigation

7. Experience with spring flood irrigation of meadows and arable lands beyond the Volga. Gidr. i mel. 5 no.2, 1953

1. SOLOV'YEV, V. A.

2. USSR (600)

4. Irrigation - Caspian Depression

7. Irrigation cycle for natural meadows in local storage basins of the Caspian Depression, Gidr. i mel., 5, no. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, ___April___ 1953, Uncl.

PETROV, Yevgeniy Grigor'yevich; SOLOVIEV, V.A., CHERNYKH, A.A.; ORLOVA, V.P., redaktor; GUREVICH, M.M., tekhnicheskiy redaktor.

[Snow water irrigation and the accumulation of moisture] Limannoe oroshenie i vlagonakoplenie. Moskva, Gos.izd-vo sel'khos.lit-ry, 1956. 165 p.   (MIRA 10:6)
(Irrigation)

SOLOV'YEV, V.A., kand.sel'skokhozyaystvennykh nauk

Increased production by using irrigation in the trans-Volga region.
Zemledelie 23 no.11:16-19 N '61.   (MIRA 14:11)
                    (Volga Valley--Irrigation farming)

SOLOV'YEV, V.A., kand. sel'skokhoz. nauk (Saratov)

Irrigated lands as an important source for increasing meat production
in the Volga region. Gidr. i mel. 14 no:7:62-63 Jl '62.(MIRA 17:2)

ACC NR: AT6018526   SOURCE CODE: UR/0181/66/008/006/1683/1689

AUTHOR: Lyubov, B. Ya.; Solov'yev, V. A.

ORG: Central Scientific-Research Institute of Ferrous Metallurgy im. I. P. Bardin, Moscow (Tsentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii)

TITLE: Kinetics of disintegration of dislocation cracks on the polygonal walls of edge dislocations

SOURCE: Fizika tverdogo tela, v. 8, no. 6, 1966, 1683-1689

TOPIC TAGS: crystal dislocation phenomenon, crystal defect, crack propagation, metastable state, surface property, relaxation process, brittleness, hardening

ABSTRACT: The authors analyze the decay of metastable dislocation cracks on polygonal walls of edge dislocations, the decay being the result of diffusion over the surface of the crack. It is pointed out in the introduction that formation of dislocations along one side of a crack is energetically favored and that the diffusion on the surface of the crack is the more likely mechanism of disappearance of dislocation cracks at low temperatures. The time evolution of the diffusion of the atoms over the surface of the crack from the base of the crack, which is under compression, into the mouth of the crack, which is under tension, is described and the dislocation distribution produced during such an evolution is calculated. The decrease in volume accompanying the crack disintegration is also calculated as well as the relaxation times characterizing the process. It is concluded that dislocation cracks should

Card 1/2

SOLOV'YEV, V. A.

Method of determination of the resistance of Mycobacterium tuberculosis to antibiotics. Probl. tuberk., Moskva no. 3:31-33 May-June 1952.   (CLML 22;4)

1. Of the Bacteriological Laboratory (Scientific Supervisor -- Prof. P. N. Kashkin), Leningrad Institute for Surgical Tuberculosis (Director -- Prof. P. G. Kornev, Active Member AMS USSR).

SOLOV'EV, V.A., Cand Med Sci -- (diss) "Intercostal

subpleural anasthesia in lung operations." Len, 19__,

16 pp (First Len Med Inst im Academician I.P. Pavlov) 200

copies (KL, 26-59, 132)

- 124 -

SOLOV'YEV, V.A.

Experimental data on the use of intercostal anesthesia in
surgery of organs of the thoracic cavity. Vest.khir. 82
no.4:85-90 Ap '59.   (MIRA 12:6)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof.F.G.
Uglov) i kafedry operativnoy khirurgii i topograficheskoy
anatomii (zav. - prof.M.A.Sreseli) 1-go Leningradskogo medit-
sinskogo inst. im.I.P.Pavlova (Leningrad, ul.L.Tolstogo, 6/8).
          (LOCAL ANESTHESIA)   (CHEST--SURGERY)

SOLOV'YEV, V.A.

Operation on the lungs with the application of intercostal subpleural
anesthesia. Vest.khir. 83 no.8:115-121 Ag '59.   (MIRA 13:1)

1. Iz gospital'noy khirurgicheskoy kliniki (zav. - prof. F.0. Uglov)
1-go Leningradskogo meditsinskogo instituta im. akad. I.P. Pavlova).
Adres avtora: Leningrad, ul. L. Tolstogo, d.6/8, gospital'naya khirur-
gicheskaya klinika 1-go Leningradskogo meditsinskogo instituta im.
I.P. Pavlova.
                (LUNGS surg.)
                (ANESTHESIA, LOCAL)

SOLOV'YEV, V. A.

Drug resistance of mycobacteria tuberculosis in osteoarticular
tuberculosis. Probl. tub. no.2:91-93 '62.   (MIRA 15:2)

1. Iz Leningradskogo nauchno-issledovatel'skogo instituta khirur-
gicheskogo tuberkuleza (dir. - deystvitel'nyy chlen AMN SSSR
prof. P. G. Kornev)

(DRUGS—PHYSIOLOGICAL EFFECT)
(MYCOBACTERIUM TUBERCULOSIS)

SOLOV'YEV, V. A., kand. biologicheskikh nauk

Significance of specific allergy in the pathogenesis of tuberculosis. Probl. tub. 40 no.4:65-71 '62.   (MIRA 15:6)

1. Iz Leningradskogo nauchno-issledovatel'skogo instituta khirurgicheskogo tuberkuleza (dir. - prof. D. K. Khokhlov, nauchnyy rukovoditel' - deystvitel'nyy chlen AMN SSSR prof. P. G. Kornev)

(TUBERCULOSIS)   (ALLERGY)

SOLOV'YEV, V. A.

UBBR/Meteorological Research   Mar 1947
    Rain

"Contemporary Viewpoints on the Formation of Rain,"
V. A. Solov'yev, 5 pp

"Priroda" No 2

Discusses the formation of precipitation as a result
of the formation of ice particles in clouds and sup-
plants Keller's theory that rain is caused primarily
by means of water-bearing clouds. Solov'yev discusses
both Findeisen's theory of the formation of rain out
of Cumulo-nimbus and Bertherons theory of the forma-
tion of rain as a result of clouds generated at the
division of two air masses.

ID   34T62

SOLOV'EV, V. A.

Meteorology - Biography

Nikolay Nikolayevich Kalitin. Met. i gidrol, No. 3, 1949.

SOLOV'YEV, V.A.

A.I.Voeikov and current problems of climatology; materials of the
meeting of the scientific council of the Main Geophysical Observa-
tory devoted to the memory of A.I.Voeikov. Izv.AN SSSR Ser.geofiz.
no.6:739-743 Je '56.   (MIRA 9:9)
                (Voeikov, Aleksandr Ivanovich, 1842-1016)

36-58-5/12

AUTHOR: Solov'yev, V. A.

TITLE: A Method for Measuring the Sizes and Charges of Fog Droplets
   (Ob odnom metode izmereniy zaryadov i razmerov kapel' tumanov)

ABSTRACT: The author describes a device, essentially an ultramicroscope,
   developed by a group of Soviet scientists for measuring the sizes and
   charges of fog droplets. The instrument operates on the principle that
   a freely falling charged fog droplet moves along a zigzag-shaped path
   within an electrical field, constant in size but varying in direction.
   The vertical and horizontal components of the speed of the moving
   droplet may be determined by the length, amplitude, and period of the
   zigzag, and its radius and charge, respectively, by the magnitudes of
   the vertical and horizontal components of its rate of speed. The
   instrument described is a model perfected by the author and his asso-
   ciates in 1954, and is based on an instrument built in the workshops of
   the Main Geophysical Observatory in 1948. Its design was developed
Card 1/2

SOLOV'YEV V.A.

NIKANDROV, V.Ya., kand.fiz.-mat.nauk, red.; SHISHKIN, N.S., doktor fiz.-mat.
        nauk, red.; SHIFRIN, K.S., doktor fiz.-mat.nauk, red.; SOLOV'YEV,
        V.A., kand.fiz.-mat.nauk, red.; PISAREVSKAYA, V.I., red.;
        SOLOVEYCHIK, A.A., tekhn.red.

[Investigations of clouds, precipitation, and thudnerstorm
electricity] Issledovanie oblakov, osadkov i grozovogo elektri-
chestva; sbornik dokladov V Mezhvedomstvennoi konferentsii po
voprosam issledovaniia oblakov, osadkov i grozovogo elektrichestva.
Leningrad, Gidrometeor. izd-vo, 1957. 214 p.   (MIRA 11:6)

1. Russia (1923-   U.S.S.R.) Glavnoye upravleniye gidro-
meteorologicheskoy sluzhby.
        (Clouds) (Atmospheric electricity)
        (Precipitation (Meteorology))

GANDIN, L.S.; DUBOV, A.S.; SOLOV'YEV, V.A.

In the Voeikov Main Geophysical Observatory. Meteor. i gidrol.
no.8:70-72 Ag '57.   (MIRA 10:8)
                        (Meteorology)

SOLOV'YEV, V.A., kandidat fiziko-matematicheskikh nauk.

What is electroclimate? Priroda 46 no.6:73-76 Je '57. (MLRA 10:7)

1. Glavnaya geofizicheskaya observatoriya im. A.I. Voyeykova,Leni ..rad
(Atmospheric electricity) (Air, Ionised)

MAKHOTKIN, L.G.; SOLOV'YEV, V.A.

Role of electric charge in the coagulation of fog droplets. Trudy
GGO no.73:116-122 '58.   (MIRA 11:9)
     (Atmospheric electricity) (Fog)

MAKHOTKIN, L. G., SOLOV'YEV, V. A.

Electrical characteristics of the atmosphere during fogs. Trudy
GGO no.97:63-86 '60.   (MIRA 13:8)
      (Atmospheric electricity)   (Fog)

S/196/62/000/022/005/007
E194/E155

AUTHORS: Makhotkin, L.G., and Solov'yev, V.A.

TITLE: Electrical characteristics of the atmosphere during
             fog

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika,
             no.22, 1962, 29, abstract 22 E 199. (In collection:
             "Issled. oblakov, osadkov i grozovogo elektrichestva"
             ('Investigations of clouds, precipitation and
             atmospheric electricity'), Moscow, AN SSSR, 1961,
             219-224).

TEXT: In fog, when the electrical properties of the
atmosphere are significantly different from normal, the potential
gradient is greater, the air conductivity is much reduced and the
concentration of light ions is lower. Until recently, few detailed
results of observations made during fog have been available.
The significance of theoretical calculations made in the
Laboratoriya aerozoley (Aerosol Laboratory) of the Fiziko-
khimicheskiy institut imeni Karpova (Physicochemical Institute
imeni Karpov) twenty years ago was recently evaluated and the
Card 1/2

Electrical characteristics of the ...   S/190/62/000/022/005/007
                                           E194/E155

conclusions previously obtained were repeated in a number of works.
The importance of the formulae is not that they replace measurements
by calculations, but that they serve to check the correctness and
completeness of description of micro-processes in fog, and
establish general assessments and relationships between the various
characteristics. The meteorological characteristic of visibility
range may be associated with the atmospheric electrical character-
istic of light ion concentration. Experimental data concerning
the charges on fine drops of fog are in good agreement with
experimental results measured in clouds on the mountain Elbruss by
a completely different method.   9 references.

[Abstractor's note: Complete translation.]

Card 2/2

S/0000/63/000/000/0115/0122

ACCESSION NR: AT4030534

AUTHOR: Solov'yev, V. A.

TITLE: On the possibility and perspective of providing storm activity information to operational service for aviation

SOURCE: Nauchnaya konferentsiya po aviatsionnoy meteorologii. Moscow 1960. Materialy*. Moscow, Gidrometeoizdat, 1963, 115-122

TOPIC TAGS: storm center, lightning, cathode direction finder, air temperature, meteorological observatory, upper atmosphere, cloud

ABSTRACT: This paper is one of 13 previously unpublished reports of the 40 papers given at the Nauchnaya konferentsiya po voprosam aviatsionnoy meteorologii (scientific conference on problems of aviation meteorology) that was held in June and July of 1960 in Moscow at the Glavnoye upravleniye gidrometeorologicheskoy sluzhby* SSSR. The author stated that danger to aircraft from storm activity still exists. A graph was presented showing the number of aircraft destroyed by lightning. Of those catastrophes, more than half occurred at altitudes of 3-4 km with air temperatures of about 0°. Maps were presented showing storm center locations at particular times, in Europe, the Middle East, and the Far East. Storm activity data from various

Card 1/2

SOLOVYEV, V.A.

"The significance of atmospheric electricity measurement."

Report submitted to the Third Intl. Conf. on Atmospheric and Space
Electricity,   Montreaux, Switzerland   May 1963

SKLYAROV, V.M., otv. red.; GRIBANOV, N.N., red.; MUROMTSEV, A.M.,
red.; POGOSYAN, Kh.P., red.; PROTOPOPOV, V.S., red.; RUDNEV,
G.V., red.; SOKOLOV, A.A., red.; SOLOV'YEV, V.A., red.;
USMANOV, R.F., red.; ZHDANOVA, L.P., red.; RUSAKOVA, G.Ya.,
red.; CHEPELKINA, L.A., red.; KOLESOVA, Z.M., tekhn.red.

[Man and the elements; hydrometeorologic desk calendar for
1964] Chelovek i stikhiia; nastol'nyi gidrometeorologicheskii
kalendar' 1964. Leningrad, Gidrometeorologicheskoe izd-vo,
1963. 154 p.   (MIRA 17:2)

L 8444-66   EWT(m)/EWA(h)

ACC NR: AP5025706   SOURCE CODE: UR/0286/65/000/018/0057/0057

AUTHORS: Konovalov, Ye. A.; Ploshchanskiy, L. M.; Solov'yev, V. A.

ORG: none

TITLE: A device for checking radiation meters. Class 21, No. 174729

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 57

TOPIC TAGS: radiation monitor, radiometry, radiometer, filter, mercury

ABSTRACT: This Author Certificate presents a device for checking radiation meters. It contains a radiation source, a shielded housing with a collimated channel, an attenuating filter, mechanisms for moving and fixing the position of the source, and an effective area (see Fig. 1). To simplify the design, increase the measurement range, and reduce the checking time, a liquid metal (e.g., Hg) is used as the attenuating filter. The radiation source is placed directly inside the filter and can be moved.

UDC: 621.039.55
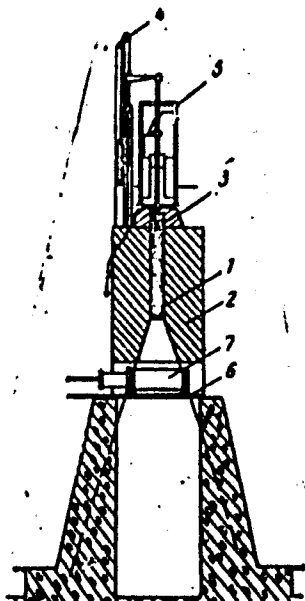
Card 1/2

L 04444-66

ACC NR: AP5025706

Fig. 1.   1 - Radiation source;
2 - shielded housing;
3 - liquid-metal attenuating
filter; 4 - mechanism for moving
source; 5 - mechanism for fixing
source; 6 - effective area;
7 - sensing element of radiation
meter.

Orig. art. has: 1 figure.

SUB CODE: 18/   SUBM DATE: 17Apr64

Card 2/2

L 12079-66   EWT(1)/FCC   GW

ACC NR: AT5028665   SOURCE CODE: UR/2633/65/000/019/0191/0195

AUTHOR: Solov'yev, V. A.   30

ORG: Far Eastern Scientific Research Hydrometeorological Institute, Vladivostok   B+1
(Dal'nevostochnyy nauchno-issledovatel'skiy gidrometeorologicheskiy institut)

TITLE: Thunderstorm activity in the Far East

SOURCE: Vladivostok. Dal'nevostochnyy nauchno-issledovatel'skiy gidrometeorologiche-
skiy institut. Trudy, no. 19, 1965. Voprosy aerologii i sinopticheskoy meteorologii
(Problems in aerology and synoptic meteorology), 191-195

TOPIC TAGS: diurnal variation, thunderstorm, storm, climatology, atmospheric
disturbance,   marine meteorology

ABSTRACT: Thunderstorm activity was characterized on the basis of direction finding
observations. The study covered the period 1961-1962 for the area 30--55 N, 115--150
E, and was an extension of similar studies conducted in European Russia. The thunder-
storm activity was studied for its annual and daily variations. Over land there were
no thunderstorms from December through February, and 84% of the storms occurred from
June through September. At sea, storms occurred each month, with the maximum of a less
extreme variation in the fall-winter. A maximum daily activity was observed over the
land in the evening. The observation region was divided into four sections for study-
ing the duration of the storm period and the number of days with thunderstorms. One

Card 1/2   UDC: 551.594.2 (5-012)

L 12079-66

ACC NR: AT5028665

area, entirely over land, showed a typical continental pattern and gave good agreement between the direction-finding observations and weather station reports. Two areas had a mixed land-sea surface pattern and showed an intermediate thunderstorm pattern. Here correlation between the two types of data was poor due to the limited weather reporting system. The fourth area, entirely over water, showed a typical marine thunderstorm pattern and accounted for half of the storm-breeding centers of the entire region. This method is equally valid over land and sea. Orig. art. has: 1 figure and 4 tables.

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 002

Card 2/2

L 29142-66   EWT(1)/FCC   GW

ACC NR: AP6018680   SOURCE CODE: UR/0050/65/000/010/0032/0034

AUTHOR: Solov'yev, V. A.(Candidate of physicomathematical sciences)

ORG: Main Geophysical Observatory(Glavnaya geofizicheskaya observatoriya)

TITLE: Diurnal and annual variation of thunderstorm activity in the North Atlantic and the seas of Western Europe and the Far East

SOURCE: Meteorologiya i gidrologiya, no. 10, 1965, 32-34

TOPIC TAGS: diurnal variation, storm

ABSTRACT: On the basis of an analysis of data from the network of stations in Great Britain and the Soviet Union for direction-finding of atmospherics for the years 1961-1963 this article gives the distribution (diurnal and annual) of thunderstorms for the region from $35°$ to $70°$ N and from $30°$ W to $30°$ E, the Norwegian Sea, North Sea, Baltic Sea and Mediterranean Sea and the North Atlantic, and $25°$ to $60°$ N from $120°$ to $155°$ E, the Sea of Okhotsk, Sea of Japan, Yellow Sea and East China Sea and part of the Pacific Ocean. For the different seas of western Europe there is a different annual variation of thunderstorm activity. For example, for the Norwegian Sea and the Northeastern Atlantic the maximum thunderstorm activity occurs in the cold half of the year. In the Norwegian Sea area 85% of all thunderstorms occur from October through March, and in the Northeastern Atlantic -- 70%. The mean an-

Card 1/2   UDC: 551.594.21

L 29140-66

ACC NR: AP6018680

nual number of thunderstorms for the Norwegian Sea is 7 per 100,000 km^2, whereas for the same area of the Northeastern Atlantic there are 100, over the North Sea -- 170, and over the Mediterranean -- 600. In the Mediterranean area the distribution of thunderstorms is almost uniform throughout the year. Over the Sea of Okhotsk, on the other hand, thunderstorm activity is confined to the warm months of the year; thunderstorm activity is 25 less frequent than over the North Sea, which can be attributed to the presence of the cold Kurile Current. Although the Sea of Japan is at the same latitude as the Mediterranean its thunderstorm activity is different: the distribution is not uniform and thunderstorms occur almost four times less frequently. In the Pacific area the activity resembles that of the Atlantic, probably due to accumulation of heat by the world ocean and the same mechanism of its distribution during the year at the same latitudes. Similar comparisons are made for the diurnal distribution. For those seas where the surrounding land exerts a great influence there is a diurnal variation of thunderstorms. Seas that adjoin the ocean feel no such influence. Orig. art. has: 4 tables. /JPRS/

SUB CODE: 04 / SUBM DATE: 02Feb65 / ORIG REF: 002 / OTH REF: 004

Card 2/2

SOLOV'YEV, V./.

Elastic interaction of vacancies with edge dislocations in
the continuity theory. Fiz. met. i metalloved. 20 no.4:634-
636 O '65.   (MIRA 18:31)

1. Institut metallovedeniya i fisiki metallov i Tsentral'-
nyy nauchno-issledovatel'skiy institut chernoy metallurgii
imeni I.P.Bardina.

SOLOV'YEV, V. A.

Solov'yev, V. A. "On the problem of the causes of castration of mares (sic)", Trudy
Zhitomirsk. s. -kh. in-ta, Vol. 111, 1949, p. 91-96.

SO: U-4630, 1 Sept. 53, (Letopis 'Zhurnal 'nykh Statey, No. 23, 1949).

CATEGORY   : Farm Animals.
                  The Swine.
ABS. JOUR.   : RZhBiol., No. 3. 1959, No.12069

AUTHOR   : Solovlev, V. A.
INST.   : Zhitomir Institute of Agriculture.
TITLE   : The Influence of Protein Nutrition upon the
                  Increase of Early Maturity in Pigs.

ORIG. PUB.   : Nauchn. tr. Zhitomirsk. s.-kh. in-t, 1957, 4,
                  201-214.

ABSTRACT   : Experiments were carried out on 3 groups of
                  pigs (each of them consisted of the large
                  white, Mirgorodskaya and local breeds). In
                  the course of 12 months the piglets of the 1st
                  group were given 135 kg of digestive protein,
                  and 1,674 kg of feed units, while concentrates
                  constituted 69 percent, and juicy feeds 22 per-
                  cent of the ration's nutritive value; the pig-
                  lets of the 2nd group were correspondingly
                  given 73, 1,641, 20 and 76.5; of the 3rd
                  group, 39, 784, 31 and 65. At the age of one

Card: 1/2

SOLOV'YEV, V. A. ████ Doc Agr Sci -- (diss) "Biology of the early maturing of hogs and methods of modifying it." Mos, 1959. 33 pp (Min of Agr RSFSR. Mos Vet Acad), 160 copies (KL, 46-59, 138)

SOLOVTEV, Viktor Alekseyevich

"The Biology of the Early Maturation of Pigs and Methods of Altering It";

dissertation for the degree of Doctor of Agricultural Sciences
(awarded by the Timiryasev Agricultural Academy, 1962)

(Izvestiya Timiryasevskoy Sel'skokhozyaystvennoy Akademii, Moscow, No. 2,
1963, pp 232-236)

L 24486-65   EWT(1)/EWG(v)/EEC(t)/EEC(b)-2/FCC   Pe-5   RB/GW/WS

ACCESSION NR: AT5002954   S/2531/64/000/163/0076/0086

AUTHOR: Solov'yev, V. A.

TITLE: Thunderstorm activity over the European part of the SSSR

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 163, 1964.
Voprosy klimatografii (Problems in climatography), 76-86

TOPIC TAGS: thunderstorm, climatography, lightning, atmospheric turbulence,
meteorological radar

ABSTRACT: For the purpose of obtaining data on thunderstorms in areas without
meteorological stations, a network of stations has been established for the radio direction
finding of atmospherics associated with thunderstorm activity. This network covers
virtually the entire area of the Soviet Union and certain parts of foreign countries adjacent
to the SSSR. Such observations have been made since 1957. This work has yielded a
mass of data on thunderstorm distribution and intensity (observations are made eight times
daily). The study was based on stations located in the European SSSR and Central Asia,
supplemented by data from similar stations in Great Britain, and then compared with
data from meteorological stations. All observations were averaged for 5-degree grid
squares. Tables were prepared for the number of thunderstorms, number of days

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L 24486-65

ACCESSION NR: AT5002954   /

with thunderstorms and duration of thunderstorms for each grid square. Data were
analyzed for the June-August period for the area from 45 to 65°N and from 25 to 60°E.
There was good agreement with available data from the British system. Figures 1 and 2
of the Enclosure show the maps of thunderstorm activity for the summers of 1960 and
1961; these differ greatly. The regional differences and change in pattern between the
two years are discussed, although no generalizations can be drawn from such limited
data. However, such maps are superior to those compiled from meteorological data
because data are used for areas where no meteorological information is available.
Diurnal variation of thunderstorm activity was also analyzed. Orig. art. has: 1 formula,
4 figures and 5 tables.

ASSOCIATION: Glavnaya geofizicheskaya observatoriya, Leningrad (Main geophysical
observatory)

SUBMITTED: 00   · ENCL: 02   SUB CODE: ES

NO REF SOV: 003   OTHER: 004

Card 2/4

L 24486-65
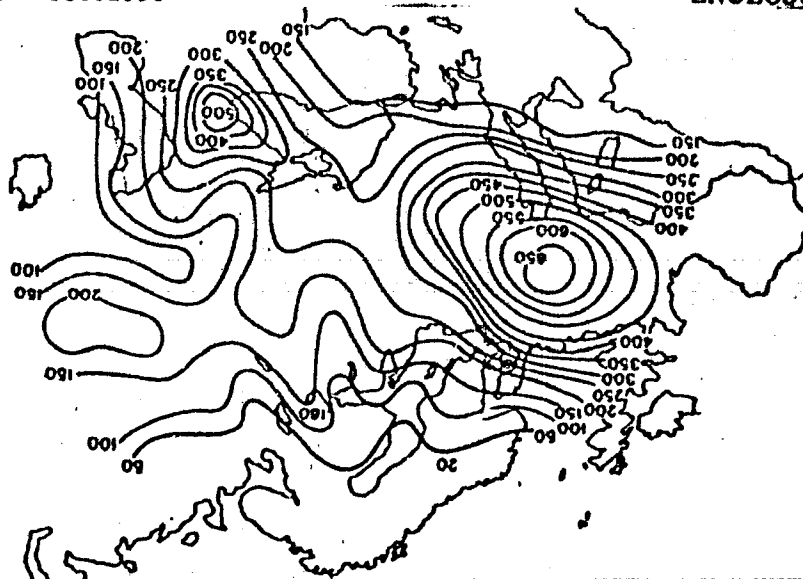
Fig. 1. Thunderstorm distribution over Europe for June-August 1960.
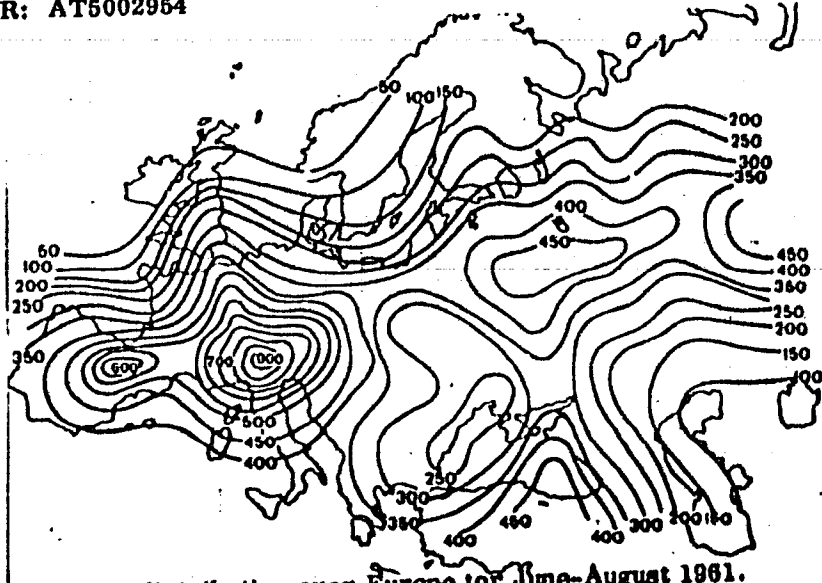
Card 3/4

L 24486-65

ENCLOSURE: 02

Fig. 2. Thunderstorm distribution over Europe for June-August 1961.

Card 4/4

SOLOV'YEV, V.A.

Causes of the discrepancy between atmospherics and weather conditions. Trudy GGO no.157:73-75 '64   (MIRA 17:8)

L 21799-65   EWT(1)/FCC   ASD(a)-5/AFWL/SSD/AFETR/RAEM(a)/RAEM(i)/RAEM(j)/
ESD(c)/ESD(gs)/ESD(t)   GW

ACCESSION NR: AP5001815   S/0050/65/000/001/0030/0035

AUTHOR: Solov'yev, V. A. (Candidate of physico-mathematical sciences)

TITLE: Determining storm activity from direction-finding data on atmospherics

SOURCE: Meteorologiya i gidrologiya, no. 1, 1965, 30-35

TOPIC TAGS: atmospherics, direction finding

ABSTRACT: The data from synoptic charts represent a very small percentage of
total land surface, and these are insufficient for predicting storms. For predic-
tions at sea they are useless. The method of determining direction of atmospher-
ics is unique and may be used for distances up to several thousand kilometers.
The SSSR has 15 stations for atmospherics observation, arranged in three groups:
European, Central Asian, and Far Eastern. The direction of atmospherics is deter-
mined by simultaneous observation at three or four points. Thus far, information
on atmospherics has been used only for refining the position of fronts, for
gaining some idea of storm conditions in regions without weather stations, and
the like. The author attempts to use such data for delineating the characteris-
tics of storm activity. Maps of storm activity were prepared on the basis of
data from European stations for 1960 and 1961. Another map showing storm centers

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L 21799-65

ACCESSION NR: AP5001815

on the basis of atmospherics was also prepared. This map shows that the daily
behavior of different centers distributed along lines of latitude varies, but is
almost identical along meridians. It can be observed that storm maximums arrive
earlier toward the east. On continents, in general, the storm-activity maximums
arrive in 12-15 hours. This is apparently due to earlier heating of the land.
The larger the number of water bodies in a region, the later the arrival of the
maximums, coming as late as 18-21 hours. The author concludes that data on direc-
tion of atmospherics may more completely describe storm activity than data of
weather stations. It is especially important to note that these data permit fore-
casting for the ocean as well as the land. Orig. art. has: 6 figures and 2
tables.

ASSOCIATION: Glavnaya geofizicheskaya observatoriya (Chief Geophysical Observa-
tory)

SUBMITTED: 04Feb64

SUB CODE: ES

NO REF SOV: 003

ENCL: 00

OTHER: 000

Card 2/2

Simple method of measurement of the absorption of supersonic waves in strongly absorbing solid bodies. I. G. Mikhailov and V. A. Solov'ev. *Doklady Akad. Nauk S.S.S.R.* 78, 246-8 (1951).—A prism of the solid examd. is immersed in H_2O; a supersonic beam is refracted through the prism, and the intensity of the refracted beam is measured with the aid of a suitable collector such as a radiometer or a piezoelec. quartz. The thickness x of the absorbing layer of solid is varied by displacement of the prism. The intensity of the transmitted beam is $I = I_0 e^{-ax}$, where a = absorption coeff. of the solid, and the absorption coeff. of H_2O can be disregarded in comparison with a. The effect of reflection is eliminated automatically. Plots of log I as a function of x are linear. The expt. error is about 10% with $a \sim 0.1$ and about 5% with $a \sim 1$. Detns. of a were made, in frequencies $\nu = 1.96, 2.19, 4.87, 6.48,$ and 6.72 megahertz, on: rosin, $a = 0.11, 0.17, 0.38, 0.55, 0.43,$ polymethylmethacrylate, $0.33, 0.43, 0.68, 0.81, 0.91;$ poly-styrene, $0.11, 0.14, 0.23, 0.33, 0.35;$ bitumen (softening temp. $\sim 90°$) $1.6, 2.4, 3.1, -, 3.9$. Plots of log a as a function of log ν are linear for rosin and bitumen, but are distinctly curved convexly to the axis of ν for the 2 polymers. N. Thon

SOLOV'YEV, V. A.

USSR/Physics - Ultrasonic in Liquids   May 53

"Absorption of Ultrasonics Waves in Liquids and the
Molecular Mechanism of Volume Viscosity," I.G.
Mikhailov and V.A. Solov'yev

Usp Fiz Nauk, Vol 50, No 1, pp 3-50

Study of theory of "-uner-Strokes" absorption coeff of
ultrasonic waves in liquids indicates that molecular
mechanism of vol viscosity is not yet clarified.
Further development of theory of structural relaxation
would be very useful (see J.J. Markham et al. Rev
Mod Phys. 23, 353 (1951)).

261T100

MIKHAYLOV, I.G.; SOLOV'YEV, V.A.

Use of compound piezoelectric vibrators for studying the mechanical
properties of polymers. Akust.zhur.1 no.4:343-347 O-D '55.(MIRA 9:2)

1.Leningradskiy ordena Lenina gosudarstvennyy universitet imeni
A.A.Zhdaneva.
(Oscillators, Crystal) (Polymers and polymerization)

SOLOV'YEV, V.A.

534 23 : 534.26

6086.   THE THEORY OF THE ULTRASONIC INTERFEROMETER.
V.A. Solov'ev.
Akust. Zh., Vol. 2, No. 3, 285-90 (1956). In Russian.
The ultrasonic interferometer is widely used for the measurement of velocity of sound in liquids and gases. Its use can be extended to the measurement of the absorption coefficients, providing absorption is not great. The author puts forward a new computational formula to be applied to the interferometer measurements in order to obtain the absorption coefficients.   C.R.S. Manders

Leningrad State U.

USSR/Acoustics - Ultrasonics, J-4

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35565

Author: Solov'yev, V. A., Mikhaylov, I. G.

Institution: Leningrad University, Leningrad, USSR

Title: On the Theory of the Composite Piezoelectric Vibrator

Original
Periodical: Izv. AN SSSR, ser. fiz., 1956, 20, No 2, 261-267

Abstract: Description of a method of investigating the mechanical proper-
ties of high polymers over a wide frequency range (10^4 - 10^5
cycles) with the aid of a composite piezoelectric vibrator. A
bar made of the investigated material is glued to the piezoelec-
tric bar in which oscillations of the required type are excited.
The resonant frequency and the Q of the composite vibrator are
then measured. The contribution of the piezocrystal to the para-
meters of the composite vibrator can be readily eliminated. The
theory of the composite-vibrator is analyzed and equations are
derived for calculating the complex modulus of elasticity of the

Card 1/2

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35565

Abstract: investigated substance for the following 3 types of load of the
piezocrystal: load on one side; the lengths of the piezocrystal
and of the specimen are chosen aribtrarily. Load symmetrical --
2 equal specimens of arbitrary lengths. Load on one side, but
the length of the specimen is so chosen that its resonant fre-
quency is approximately the same as the frequency of the crystal.
A comparison is made of the 3 variants, principally from the
point of view of their use for the investigation of mechanical
properties (modulus of elasticity and absorption coefficient)
of high polymers.

Card 2/2

SOLOV'TEV, V. A.

"Application of a Composite Piezoelectric Vibrator in the Study of Polymers," report presented at the Seminar on Physics, Application of Ultrasound, 23-26 Oct '57.

Leningrad Electro-Tech. Inst., Leningrad.

TITLE: Investigation into the mechanical properties of polyethylene and of paraffin by a composite vibrator method. (Issledovaniye mekhanicheskikh svoystv polietilena i parafina metodom sostavnogo vibratora.)

PERIODICAL: "Akusticheskiy Zhurnal" (Journal of Acoustics), 1957, Vol. III, No. 1, pp. 65 - 73, (U.S.S.R.)

ABSTRACT: Measurement of the dynamic Young modulus

$$E = E' + iE''$$

(where E' represents elasticity and the imaginary part E'' represents the energy loss) in polymers by the composite vibrator method has been described in their earlier works by the authors 1), 2). The sample of material under test, in the form of a rod, is attached to the surface of an axially vibrating rod of piezo-electric material. The self-resonant frequency and mechanical losses in the sample are then determined from the change in the resonant frequency of the equivalent resistance of the vibrator. If resonant frequencies both of the piezo-electric rod and of the sample are nearly equal, a sample rod of a smaller diameter than that of quartz may be used 1), which permits wider application of the method, namely, for testing materials with low sound speed and high losses. In the present article, the method is applied to the investigation of mechanical properties of polyethylene and paraffin (used for condensers filling, mean molecular, cryosopic in benzole weight 490) in a wide temperature range,

Card 1/3

Investigation into the mechanical properties of polyethylene
and of paraffin by a composite vibrator method. (Cont.)
46-1-8/20

-165 to + 90 °C, in which the sound velocity drops to the
order of 250 m/sec. Measurements were made at 40.0, 60.5,
75.0 and 100.3 kc/s, in a thermostatically-controlled (to
within 0.1 ÷ 0.3 °C) ambience. The self-resonant frequencies
of samples were within 10% of the frequency of the quartz.
Results are presented as graphs of E', E'' and of the
logarithmic decrement as functions of the temperature.
A peculiarity of the curves of temperature dependence of
the sound velocity, both of polythene and paraffin is a very
rapid fall of the velocity with temperature. Curves for E''
(energy losses) show 2 distinct broad maxima. Although their
positioning is not accurately determined and the temperature
interval rather narrow it can be reasonably firmly established
that these maxima, when frequency is increased, tend to shift
towards the high temperature region, which implies that they
are of relaxation origin. Comparison with dielectric
measurements shows that the form of relaxation spectra in both
cases differs, though the positioning regions coincide very
well. No dispersion can be observed, which cannot be explained
from the point of view of relaxation theory. The results for
polyethylene are largely in accordance with results obtained
by others. From theoretical considerations, a third maximum
should be expected for E'' in the investigated temperature

Card 2/3

Investigation into the mechanical properties of polyethylene
and of paraffin by a composite vibrator method. (Cont.)
46-1-8/20
range, but it is probably masked by the too small value of
the investigated moduli.
5 graphs are included. There are 16 references, of which 7
are Russian.

ASSOCIATION: Leningrad State University (Leningradskiy Gosudarstvennyy
Universitet.)

SUBMITTED: May 10, 1956.

AVAILABLE:

Card 3/3

SOLOV'YEV,V.A.; Cand Phys-Math Sci --(diss) " Study of dynamic ~~stnrfly illctic~~ ~~loed,-resilient~~ properties of certain polymers by the method of a compound piezoelectric vibrator." Len, 1958. 9 pp (Len Order of Lenin State Univ im A.A.Zhdanov. Physics Faculty). 100 copies

(KL, 20-58, 93)

-15-

AUTHORS: Mikhaylov, I.G., Solov'yev, V. A., Syrnikov, Yu. P.

TITLE: The Main Problems of Contemporary Molecular Acoustics
(Osnovnyye problemy sovremennoy molekulyarnoy akustiki)

PERIODICAL: Akusticheskiy Zhurnal, 1958, Vol 4, Nr 3, pp 211-222
(USSR)

ABSTRACT: This is a review of the present state of molecular acoustics.
Both Western and Russian work is considered. In view of the
relative simplicity of ultrasonic methods the velocity of
sound has been measured in a very large number of liquids.
The velocity has been correlated with various macroscopic
and microscopic properties of liquids and various empirical
rules have been suggested. Among these rules is the one due
to Rao. The authors point out that in their opinion Rao's
rule does not summarise any special molecular mechanism.
This is shown above all by the approximate nature of this
result and its limited range of applicability. The correct
way of developing theoretical molecular acoustics would be
to calculate the compressibility and hence the velocity of
sound, rather than to try and find a theoretical foundation
for Rao's law. However, as is well known, this is very
difficult and has not as yet been done. Some attempts have
been made to calculate the velocity of sound directly from

Card 1/3

The Main Problems of Contemporary Molecular Acoustics

molecular considerations (Refs.5 and 7) but in these attempts
the velocity was obtained not through a solution of the
kinetic equation but by using very approximate models. These
calculations give the right order of magnitude for the
velocity of sound but they are quite useless in providing
information on the actual structure of the particular liquid.
Relaxation theory points to a connection between volume vis-
cosity and irreversible processes leading to equilibrium.
Some work on this has been done by Mandel'shtam and others
(Refs.15 and 17). In the authors' opinion, Frenkel's theory
gives the most correct physical picture of the structure of
liquids. Unfortunately, at the present time the mathematical
apparatus of this theory is not sufficiently developed. The
authors consider that a development of Frenkel's theory in
general, and its application to the calculation of compress-
ibilities in particular, would be of major value in the
present context. Among the problems discussed in the present
review is the problem as to whether relaxation processes are

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The Main Problems of Contemporary Molecular Acoustics

the only reason for the existence of volume viscosity. The authors consider that it is. On the experimental side it is pointed out that in many experiments on the absorption of sound in liquids the intensity of the ultrasonic waves was not taken into account. On the other hand, it has been established (Refs.52-54) that the coefficient of absorption does depend on the intensity even for relatively low amplitudes. Another experimental point is that measurements of absorption of ultrasonic waves should be carried out in a wider frequency range. There are no figures or table, 57 references, of which 26 are Soviet.

ASSOCIATION: Leningradskiy gosudarstvennyy Universitet (Leningrad State University)

SUBMITTED: September 14, 1957.

1. Acoustics   2. Sound--Velocity   3. Liquids--Acoustic properties

Card 3/3

AUTHOR: Solov'yev, V. A.   54-1-4/17

TITLE: The Dynamic Viscoelastic Properties of Polyethylene of
               Low Pressure (Dinamicheskiye vyazkouprugiye svoystva
               polietilena nizkogo davleniya)

PERIODICAL: Vestnik Leningradskogo Universiteta Seriya Fiziki
               i Khimii (Nr 1), 1958, Nr 4,

ABSTRACT: In addition to previous investigations (Ref.1), measurements
               of the dynamic Young's modulus and internal friction are
               carried out in one more sample of high-pressure polyethylene
               (PE_{hp}), and three different samples of low-pressure poly-
               ethylene (PE_{lp}). The method of composite piezoelectric
               resonators was employed. The curves of the temperature
               dependence of sound velocity c, acoustic reactance X,
               dynamic viscosity η, and the logarithmic decrement Λ at
               75 kc/sec are given within the temperature range of from
               $-150°$ C up to nearly melting point. The values of c in
               PE_{hp} are higher than in PE_{lp}: The inflection on velocity

Card 1/3

The Dynamic Viscoelastic Properties of Polyethylene of   5:-1-4/17
Low Pressure

curves in the region of the low-temperature loss peak is
more pronounced except in one (brittle) sample; the peak
itself is somewhat higher. The second loss peak, which is
near room temperature, is shifted towards higher tempera-
tures (except in the case of a brittle sample). Measurements
carried out at different frequencies (4o to 1oo kc/sec) with
a sample of PE_{1p} show the frequency shift of the low-tempe-
rature loss peak (activation energy is of the order 6-?
kcal/mol), but no dispersion of c is observed. Low-pressure
polyethylene differs from high-pressure polyethylene by the
low degree of ramification of chains (the number of groups
CH_3 per 1oo groups CH_2 is lower by a manifoll in low -
pressure polyethylene) and by the correspondingly higher
degree of crystallinity (7o-8o% against 5o-6o% if crystalli-
nity is estimated according to density). In this connection
it was interesting to compare the dynamic properties of
high- and low-pressure polyethylene. Similar investigations
were carried out by numerous authors at frequencies of ~ 1 c
Card 2/3   (Ref. 2), 15o-15oo c (Ref. 3),5 - 5kc (Refs.4-5). (In these

The Dynamic Viscoelastic Properties of Polyethylene of Low   54-1-4/17
Pressure

works the resonance method was employed and frequency was
notified together with temperature). In the work (Ref.6)
carried out at 2 kc also the dielectric losses on the
frequency of form 1,5 and 1o kc were investigated. The
low-pressure polyethylene investigated here was produced
by NIIPP and EZ. The author thanks N.N. Andreyeva for
the samples and values placed at his disposal (the latter
appearing in the 4 first columns of the table). The sample
of low-pressure polyethylene - 2 and low- pressure polyethy-
lene - 1, which had been previously investigated, (Ref.1)
is an industrial product of the Chemical Kombinat in Okhta.
The author thanks Ye. Kh. Gel'gren for the samples and
for being told their molecular weights, and he also thanks
I. G. Mikhailov for valuable advice given. There are 1
figure, 1 table, and 9 references, 2 of which are Slavic.

SUBMITTED: November 15, 1957

AVAILABLE: Library of Congress
Card 3/3   1. Polyethylene—Properties—Analysis

24(1)   SOV/46-5-3-28/32

  AUTHOR: Solov'yev, V.A.

  TITLE: On the Allowance for Reflection at the Radiator in the Theory of an
                 Ultrasonic Interferometer (Ob uchete otrasheniya na izluchatele v
                 teorii ul'trasvukovogo interferometra)

  PERIODICAL: Akusticheskiy zhurnal, 1959, Vol 5, Nr 3, p 382 (USSR)

  ABSTRACT: V. Ilgunas and E. Jaronis (Ref 1) state that Hubbard's interferometer
                 theory (Ref 2) is in error since Hubbard assumes that the secondary waves
                 are totally reflected from the radiator surface. The author points out
                 that when secondary waves are reflected from a radiating surface its
                 vibrational velocity V is altered. Consequently either a new expression
                 for this velocity should be used or additional pressure, which would
                 need to be applied to the radiating surface to keep its vibrational
                 velocity equal to its original value V, should be included in the
                 expression for the total pressure on the radiating surface. Both
                 these alternatives are equivalent to an assumption that the secondary
                 waves are totally reflected from the radiating surface. Hubbard's formula
                 is also confirmed by an exact solution of the interferometer problem
                 given by Mason (Ref 3) and Solov'yev and Mikhaylov (Ref 4). There are
                 5 references, 2 of which are Soviet, 2 English and 1 other.
  Card 1/2

  ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

S/081/60/000/007/012/012
A006/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 7, p. 623, # 29428

AUTHOR: Solov'yev, V. A.

TITLE: The Use of a Composite Piezoelectric Vibrator for Investigating
            the Mechanical Properties of Polymers

PERIODICAL: Tr. Seminara po fiz. i primeneniyu ul'trazvuka, posvyashch. pamyati
            prof. S. Ya. Sokolova, Leningrad, 1958, pp. 168-172

TEXT: Sound velocity and the reactive portion of the specific acoustic
impedance (depending on temperature) in polymethyl-methacrylate (I) were
measured for the purpose of checking the applicability of linear approximation
when analyzing a composite piezoelectric vibrator of variable cross section. Cases
were studied when the sections of the rod of I and of the piezo-quartz rod
were equal and when they were different. The method of measurement and the
calculational formulae were described in an article published in RFZHFiz, 1956,
No. 8, # 22 568. It is shown that when the natural frequencies of I and the
piezo-quartz rod are the same, the linear approximation is justified with the

Card 1/2

S/081/60/000/007/012/012
A006/A001

The Use of a Composite Piezoelectric Vibrator for Investigating the Mechanical
Properties of Polymers

boundary condition: the equality of total forces acting on the boundaries of
the rods. Linear approximation does not provide for a sufficient accuracy in
the case of a composite vibrator with rods of variable cross sections, if the
resonance frequencies of the rods do not approach the operating frequency of
the vibrator. It is concluded that the described method can be used for the
study of polymers if the natural frequencies are equal, and that it is
practically the only method in a frequency range of 10^4 - 10^5 cycles.

T. Khazanovich

Translator's note: This is the full translation of the original Russian
            abstract.

Card 2/2

26396
S/046/61/007/003/002/004
B104/B201

24.6111

AUTHOR: Solov'yev, V. A.

TITLE: Relaxation of excitation of molecular vibration levels

PERIODICAL: Akusticheskiy zhurnal, v. 7, no. 3, 1961, 337 - 344 X

TEXT: The establishment of energy equilibrium between the degrees of freedom
of translation and the degrees of freedom of inner molecular vibrations when
taking an excitation of higher levels into account is described by a large
number of relaxation times. To calculate them, it is necessary to introduce
"generalized coordinates" in which the system of equations of excitation
reactions is split into independent equations. If the probability of trans-
itions between the levels has the same form as that of dipole transitions with
emission, this problem can be solved. The present paper offers an exact
solution for isothermal relaxation and a solution in acoustic approximation
for relaxation at a variable temperature. If n_1, n_2, n_3, ... molecules of a
gas or a liquid are in vibrational states with the energy levels 0, $h\nu$, $2h\nu$,
$3h\nu$, ..., the equation of excitation reaction can be written as

Card 1/4

Relaxation of excitation ...

$$\dot{n}_j = -\sum_{\substack{k=0 \\ k \neq j}}^{\infty} a_{jk} n_j + \sum_{\substack{k=0 \\ k \neq j}}^{\infty} a_{kj} n_k \qquad (j = 1, 2, 3, \ldots.)$$

To solve the problem, the "generalized coordinates" $\int_m$ must then be found as linear combinations of the "natural coordinates" n_i, all of which obey the

$$\dot{\int}_m = -\frac{1}{\tau_m} (\int_m - \int_m^e) \qquad (m = 1, 2, 3, \ldots) \text{ by Mandel'shtam and Leontovich.}$$

Here, $\int_m^e$ denotes the equilibrium value of displacement $\int_m$, τ_m being the relaxation time of such displacement. This equation can be easily solved if external conditions (such as temperature) are constant. In this connection, the number of "generalized coordinates" equals the number of independent variables which describe the system. This number is infinitely large in the present case, and so is the number of relaxation times. If only excitations of the first vibration level are taken into account in the simplified theory by Kneser (Ann. Phys., 1933, 16, 5, 337) and Rutgers (Ann. Phys., 1933, 16, 5,

Card 2/4

26396
S/046/61/007/003/002/004
B104/B201

Relaxation of excitation ...

350), only one relaxation time will be found in the experiment. These circumstances are examined more closely, and the coefficients a_{jk} derived by L. Landau and Ye. Teller (Phys. Z. Sowietunion, 1936, 10, 1, 34) and by R. N. Schwartz et al. (J. Chem. Phys., 1952, 20, 10, 1591 - 1599) are shown to deviate appreciably. The author's calculations are based upon the model by Landau and Teller. For (1), equation

$$\dot{n}_j = - \left\{ jB + (j+1)A \right\} n_j + jAn_{j-1} + (j+1)Bn_{j+1} \quad (j=1,2,3;\ldots) \quad (5)$$ is formulated,

which obtains in generalized coordinates, the form

$$\dot{\zeta}_m = \sum_{k=1}^{m} \frac{m!}{k!(m-k)!} \left(\frac{-A}{B-A} \right)^{m-k} \sum_{j=k}^{\infty} \frac{j!}{k!(j-k)!} n_j,$$ and, in natural

coordinates the form

$$n_j = \sum_{k=j}^{\infty} (-1)^{j+k} \frac{k!}{j!(k-j)!} \sum_{m=1}^{k} \frac{k!}{m!(k-m)!} \left(\frac{A}{B-A} \right)^{k-m} \zeta_m.$$ From these

equations, equations of the form (2) with relaxation times $\tau_m = 1/m(B-A)$

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Relaxation of excitation ...

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S/046/61/007/003/002/004
B104/B201

are obtained for each ξ_m. The equations obtained here allow problems of isothermal relaxation to be solved. The Boltzmann distribution is discussed for an example. The application of results to the solution of acoustic problems is dealt with next. The coefficients A and B in (5) are not constant in this case. The sound-wave amplitudes are assumed to be small, which permits (5) to be linearized. The representation of the relaxation equation in diagonal form is given in the appendix. I. G. Mikhaylov is thanked for his advice, and A. G. Vlasov for a consultation. There are 6 references: 2 Soviet-bloc, and 4 non-Soviet-bloc. The references to English-language publications read as follows: R. N. Schwartz et al., Calculation of vibrational relaxation times in gases. J. Chem. Phys., 1952, 20, 10, 1591 - 1599; E. W. Motroll, K. E. Shuler. Studies in nonequilibrium rate processes. I, The relaxation of a system of harmonic oscillators. J. Chem. Phys., 1957, 26, 3, 454 - 464.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: November 17, 1960

Card 4/4

SOLOV'YEV, V.A.

"Absorption and dispersion of ultrasonic waves" by K. F. Herzfeld,
T. A. Litovitz. Reviewed by V. A. Solov'ev. Akust. zhur. 7
no.1:120-121 '61.   (MIRA 14:4)
                        (Ultrasonic waves)

            (Herzfeld, K.F.)   (Litovitz, T. A.)

S/843/62/000/000/005/010
D207/D308

AUTHORS: Gotlib, Yu.Ya., Salikhov, K.M. and Solov'yev, V.A.

TITLE: Theory of the absorption of ultrasound in polymer
                 solutions

SOURCE: Stroyeniye i fizicheskiye svoystva veshchestva v
                 zhidkom sostoyanii; materialy IV soveshch. po.probl.
                 zhidkogo sost. veshchestva, v Kiyeve 1959 g. Kiev,
                 Izd-vo Kiev. Univ., 1962, 85-91

TEXT: Experimental results for the absorption of ultra-
sound in polyisobutylene solutions in benzene (3 - 15% conc.) are
accounted for by the following model. Polymer molecules are repre-
sented by elastic filaments immersed in continuous viscous medium.
The filaments execute Brownian movements and assume various bent -
shapes. Van der Waals interactions (and dipole interactions in
polar polymers) between the filaments make them behave as a network
joined by Van der Waals bonds. Friction with the solvent and between
the individual segments of the neighboring polymer filaments are

Card 1/2

S/843/62/000/000/005/010
D207/D308

Theory of the absorption ...

allowed for. Relaxation of the viscosity is included by assuming a nearly continuous spectrum of relaxation times. This model accounts for (1) the lack of correlation between the viscosity and the absorption coefficient of ultrasound in a polymer solution, 2) the reduction of the ratio α/ν^2 (α is the absorption coefficient and ν is the frequency) with increase of the ultrasound frequency, and 3) the reversible changes of structure appearing at high sound intensities. The theory is presented as a physical description of the mechanisms involved, with a minimum of mathematical treatment. There are 2 figures and 1 table.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy AN SSSR (Institute of High Molecular Compounds, AS USSR)

Card 2/2

SOLOV'YEV, V.A.

Relaxation of intermolecular oscillations in gases and liquids.
Ukr. fiz. zhur. 7 no.8:854-860 S '62.   (MIRA 16:1)

1. Leningradskiy universitet.
              (Molecules) (Oscillations) (Quantum theory)

MIKHAYLOV, I.G.; SAVINA, L.I.; SOLOV'YEV, V.A.; SYROVA, M.N.

Absorption of ultrasonic waves in thiokols. Akust. zhur. 9 no.4:
460-465 '63.
(MIRA 17:3)

1. Leningradskiy gosudarstvennyy universitet.

S/046/63/009/001/013/026
B104/B186

AUTHOR: Solov'yev, V. A.

TITLE: Adiabatic relaxation in a system of harmonic oscillators

PERIODICAL: Akusticheskiy zhurnal, v. 9, no. 1, 1963, 72 - 75

TEXT: Making use of formulas and results of previous papers (V. A. Solov'yev, Akust. zh., 1961, 7, 3, 337 - 344; A. I. Osipov, Dokl. AN SSSR, 1960, 130, 3, 523 - 525) the Osipov equation is solved without restrictions. The spectrum of relaxation time for the adiabatic process of establishing an equilibrium in the energy distribution on the molecule vibration levels is calculated. In this calculation, energy transfer between the oscillating and the progressive degrees of freedom and between the excited states (resonance transfer) of different molecules are assumed. The transformation to normal coordinates defined in the previous papers has the same form as is obtained with isothermal relaxation in a system without resonance transfer. The natural acoustically active coordinate is the number of vibrational quanta in the system.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

Card 1/2

L 51054-65   EWT(1)/EWT(m)/EPF(c)/EPF(n)-2/EWP(j)/T/EED(b)-3   Pc-4/Pr-4/
Pu-4   IJF(c)   WW/RM   BOOK EXPLOITATION   S/

ACCESSION NR AM5001446

Mikhaylov, Igor' Georgiyevich; Solov'yev, Viktor Aleksandrovich; Syrnikov, YUriy
Pavlovich

Principles of molecular acoustics (Osnovy molekulyarnoy akustiki), Moscow, Izd-vo
"Nauka", 1964, 514 p. illus., biblio., index. 4,500 copies printed.

TOPIC TAGS: acoustics, sound wave, thermodynamics, relaxation process, polymer,
sound absorption, acoustic property

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    (the theory of L. I. Mandel'shtam and M. A. Leontoovich) — 236
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SUBMITTED: 22Jul64

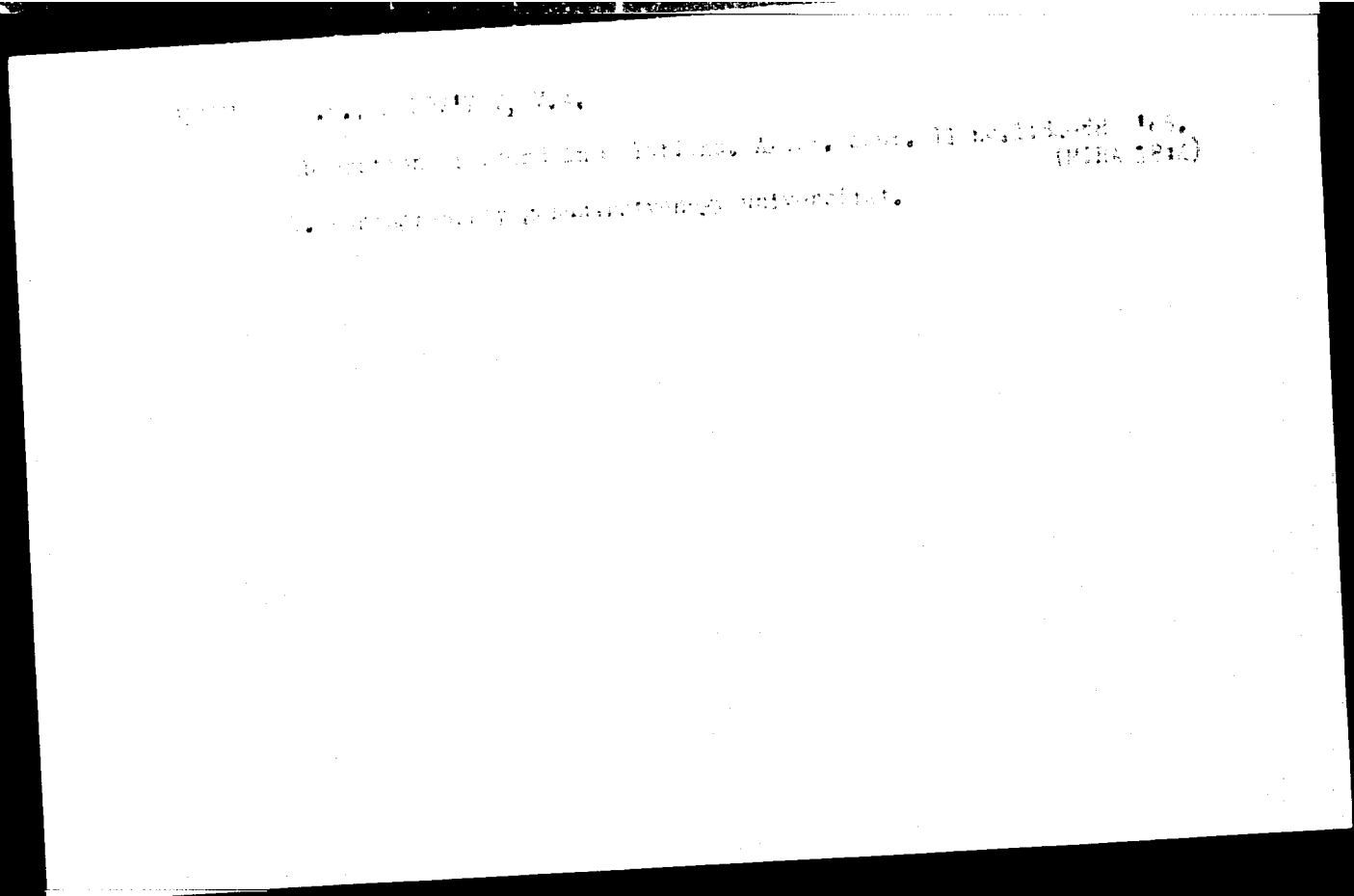NO REF SOV: 215

SUB CODE: OP

OTHER: 487

Card 2/2

L 5067-66   EWT(m)/EPF(c)/EWP(j)/T/EWA(h)/EWA(1)   WW/RM
UR/0089/65/019/002/0201/0203
ACC NR: AP5022645   539.16.07

AUTHOR: Konovalov, Ye. A.; Ploshchanskiy, L. M.; Solov'yev, V. A.

TITLE: The use of polyethylene pipes in pipelines of dosimetric air
sampling system

SOURCE: Atomnaya energiya, v. 19, no. 2, 1965, 201-203

TOPIC TAGS: nuclear reactor, atomic energy plant equipment, air
pollution control

ABSTRACT: The radioactive-air samplers are usually equipped with pipe-
lines made of aluminum or stainless steel pipes. The possibility of
their replacement by non-corrosive polyethylene pipes is discussed.
The authors describe their experiments with the polyethyline pipes hav-
ing a 20 mm diameter and 4 mm wall thickness. The results of their
tests showed that the polyethylene pipes could be used at temperatures
up to 60 C, pressures up to 3 kg/sq cm and rarefactions of 600 mm Hg.
At the beginning of 1962, the air sampling pipelines of the VVR-M
reactor were equipped with polyethylene pipes and tubes. Their total
length was about 3000 m. No trouble was experienced during two years

Card 1/2   090/0453

L 5067-66

ACC NR: AP5022645

3

of operation of this stationary dosimeter system at the Physicotechni-
cal Institute im. A. F. Ioffe of the SSSR Academy of Sciences. Orig.
art. has: 1 photo showing the mounted pipes.

ASSOCIATION: none

SUBMITTED: 05Sep64   ENCL: 00   SUB CODE: NP, MT

NO REF SOV: 000   OTHER: 000

Card 2/2 *hcl*

ACC NR: AP

AUTHOR: Lyubov, B. Ya.; Solov'yev, V. A.

ORG: TsNIIChERMET im. I. P. Bardin

TITLE: Calculating the diffusion growth rate of a pore under the action of applied stresses

TOPIC TAGS: diffusion, porosity, polycrystal, crystal vacancy, plastic deformation, metal grain structure

ABSTRACT: It is experimentally known (Rozenberg, V. M.,et al. FMM, 1966, 22, 438) that the application of relatively small stresses at high temperatures causes the growth of macroscopic pores at the grain boundaries of Cu polycrystals, chiefly owing to the diffusion of vacancies from the material to the pore. Two possible interpretations of this process are analyzed: 1) diffusion of vacancies into the pore because they attain their equilibrium concentration earlier at the surface of the pore than in the material; and 2) vacancy supersaturation of the material owing to plastic deformation. The kinetics of pore growth in the presence of applied stresses is analyzed and it is shown that changes in equilibrium concentration owing to elastic

Card 1/2

ACC NR: AP7002737

stresses alone are not enough to assure the observed growth rate of the pore. Plastic de-
formation, on the other hand, leads to an increase in the concentration of vacancies in the
material, thus leading to an excess concentration of vacancies and hence interpretation 2)
appears to be more probable: supersaturation with vacancies of the material owing to plastic
deformation is responsible for pore growth. It is worth noting that even a small increase in
the diffusion coefficient D can markedly reduce the extent of vacancy supersaturation needed
to cause pore growth. At the same time, plastic deformation can markedly affect D. Thus the
above interpretation accounts for the experimentally observed growth rates in the presence of
a reasonably moderate degree of supersaturation. In the general case, particularly during the
initial stage of the process (small pores), allowance must also be made for the additional
transport of vacancies along the grain boundaries of the polycrystal. Orig. art. has: 27 for-
mulas.

SUB CODE: 11 ,20/ SUBM DATE: 07Apr66/ ORIG REF: 009/ OTH REF: 001

Card 2/2

SOLOV'YEV, V.A.

Structural position of the Chirkovskaya Depression in the general system of depressions of the Minusinsk intermontane trough. Geol. i geofiz. no.11:49-56 '60.   (MIRA 14:2)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.
        (Minusinsk Basin—Geology, Structural)

PARFENOV, L.M.; SOLOV'YEV, V.A.; BOROVIKOV, A.M.

Tectonic terminology. Geol. i geofiz. no.9:118-123 '61.
(MIRA 14:11)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR,
Novosibirsk.

(Geology, Structural--Terminology)

SOLOV'YEV, V.A.

Genetic relationship between the Cenozoic and Mesozoic troughs in western Transbaikalia and the fault systems of different ages. Geol. i geofiz. no.4:79-87 '63.   (MIRA 16:10)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.

KOSYGIN, Yu.A.; VAN'YAN, A.L.; SOLOV'YEV, V.A.; KHARIN, Ye.P.

Recent data on the deep-seated structure of the Lake Baikal region.
Dokl. AN SSSR   151 no.5:1162-1163 Ag '63.   (MIRA 16:9)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR.
2. Chlen-korrespondent AN SSSR (for Kosygin).
        (Baikal Lake region—Electromagnetic prospecting)

SOLOV'YEV, V.A.; EYNOR, O.L.; MIRZAYEV, P.M.

Reviews and discussions. Izv. AN SSSR. Ser. geol. 30 no.6:
118-126 Je '65.   (MIRA 18:6)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR,
Novosibirsk (for Solov'yev). 2. Kiyevskiy gosudarstvennyy uni-
versitet, Kiyev (for Eynor).

SOLOV'YEV, V.A.

Thunderstorm activity in the region of the northeastern Atlantic
and western Europe according to data on atmospherics. Trudy GGO
no.177:31-36 '65.   (MIRA 18:8)

MIKHNO, N.P.; SOLOV'YEV, V.A.

Tectonic conditions governing the association of Mesozoic
formations in western Transbaikalia. Geol. i geofiz. no.10:
45-54 '65. (MIRA 18:12)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN
SSSR, Novosibirsk. Submitted March 16, 1964.

SOLOV'YEV, V.A.

Thunderstorm activity of the Far East. Trudy Dal'nevost. NIGMI
no. 19:191-195 '65   (MIRA 19:1)

AFANAS'YEV, Yu.T.; BASHARIN, A.K.; BASHARINA, N.P.; VOTAKH, G.A.; SOLOV'YEV,
V.A.; KRASIL'NIKOV, B.N., otv. red.; PARFENOV, L.M., otv. red.

[Materials on tectonic terminology. Part 3..Tectonics and its division.
Terms on structural geology.] Materialy po tektonicheskoi terminologii.
Novosibirsk. Pt. 3. Tektonika i ee razdely. Terminy strukturnoi geolo-
gii. 1964. 255 p. (Its Trudy, no.34)   (MIRA 18:4)

SOLOV'YEV, Viktor Andreyevich, tokar-rastochnik; BASTOV, Viktor
    Fedorovich, inzh.; KOVAL'ZON, F.P., red.; BARANOVA, N.N.,
    tekhn. red.

[Manufacture and introduction of multipurpose attachments for
machining compound parts] Izgotovlenie i vnedrenie universal'-
nykh prisposoblenii dlia obrabotki slozhnykh detalei. Moskva,
Proftekhizdat, 1961. 47 p.   (MIRA 15:6)
                    (Machine tools—Attachments)

PASHKOV, V.Yo.; PARFENOV, A.P.; SOLOV'YEV, V.A.; OJOV, A.I.

Selection of the optimum magnitude of the pressure area in NSh-32 and NSh-46 gear pumps. Trakt. i sel'khozmash. 32 no.6:14-15 Je '62.

(MIRA 15:6)

1. Moskovskiy zavod gidroagregatov.
            (Tractors--Equipment and supplies)

OSHAS, Ya.Y.; SOLOV'YEV, V.A.

Repairing plane-parallel ond measuring rods. Izm. tekh. no.4:39-42
Jl-Ag '57.   (MLRA 10:8)
                    (Weights and measures--Repairing)

SOLOV'YEV, V.A.

Lapping-in of plane-parallel end measures. Izm.tekh.
no.4:1-4 Ap '60.   (MIRA 13:8)
            (Length measurement)

25(6)

S/028/60/000/03/020/029
D041/D006

AUTHOR: Solov'yev, V.A.

TITLE: Devices for Checking Part Dimensions During the Machining
            Process on Surface-Grinding Machines

PERIODICAL: Standartizatsiya, 1960, Nr 3, pp 48-49 (USSR)

ABSTRACT: The Komitet standartov, mer i izmeritel'nykh priborov
            (Committee of Standards, Measures, and Measuring Instru-
            ments) has approved the "GOST 9376-60" standard for devices
            checking the dimensions of parts being machined on surface
            grinding machines. The standard fixes 3 types of device:
            for automatic, semi-automatic, and visual checking. For
            automatic and semi-automatic checking, the use of in-
            ductive electric contact or pneumatic pickups is foreseen.
            In the case of visual checking the devices may be equipped
            with tooth-lever measuring heads, dial indicators, or
            special built-in meters. The new standard obliges machine
Card 1/2   building plants to raise the accuracy of surface-grinding

S/028/60/000/03/020/029
D041/D006

Devices for Checking Part Dimensions During the Machining Process on
Surface Grinding Machines

machines, and instrument plants to supply the metal
working industry with high-stability devices.

Card 2/2

SOLOV'YEV, V.A.

Ruler for accurate measurement of external angles. Standartizatsiia
25 no. 5:55-56 My '61.   (MIRA 14:5)
                          (Rulers (Instruments))

SOLOV'YEV, V. A.

Cand Biol Sci - (diss) "Effect of Cl^- and SO_4^{--} ions on the nitrogen metabolism of glycophytes and halophytes." Rostov-na-Don, 1961. 16 pp; (Rostov State Univ); 150 copies; price not given; (KL, 6-61 sup, 209)

BARYSHNIKOV, F.A.; SOLOV'YEV, V.A.; KOVRIZHNYKH, Yu.P.

Interrelation between the petrographic and mineral composition and
the germanium content of some kinds of coal. Trudy Inst. gor. dela.
Sib. otd. AN SSSR no.3:252-265 '60.   (MIRA 14:4)
            (Coal—Analysis)   (Germanium—Analysis)

SOLOVYEV, V. A.

USSR/Biology - Botany

Card 1/1   :   Pub. 22 - 44/46

Authors   :   Solovyev, V. A.

Title   :   Effect of volatile phytoncides on the germination of pollen

Periodical   :   Dok. AN SSSR 97/4, 741 - 744, Aug 1, 1954

Abstract   :   The effect of volatile phytoncides on the germination of alfalfa pollen, is explained. Four USSR references (1946-1951). Tables.

Institution :   The A. M. Gorkiy State University, Molotov

Presented by: Academician A. L. Kursanov, March 22, 1954