

MIKIENICZ, Barbara; WALD, Stefania

Purification and concentration of diphtherial anatoxin. Med.
dosw. mikrob. 8 no.1:55-63 1956.

1. Z Prac. Serologicznej Laboratorium Technologicznego
Wytworni Surowic i Szczepionek w Warszawie. Kierownik: prof.
dr. H. Weisel.

(CORYNEBACTERIUM DIPHTHERIAE,
anatoxin, purification & concentration (Pol))

MIKIEWICZ, Barbara; WALD, Stefania

Purification and concentration of diphtheria anatoxin. II. Med.
dosw. mikrob. 9 no.3:229-235 1957.

1. Z pracowni serologicznej Laboratorium Technologicznego Wytworni
Surowic i Szczepionek w Warszawie Kierownik; prof. dr H. Meisel.
(DIPHTHERIA, immunology,
toxoid, purification & concentration (Pol))

HORODKO, Janina; MIKIEWICZ, Barbara; NAIMSKI, Krzysztof [deceased];
ZAKRZEWSKI, Kazimierz

Effect of potassium and sodium ions on the synthesis of diphtheria
toxin. Acta microbiol. pol. 10 no.2:141-146 '61.

1. Z Centralnego Laboratorium Zjednoczenia Wytworni Surowic i Szczepionek
"Biomed" w Warszawie.

(POTASSIUM pharmacol) (SODIUM pharmacol)
(CORYNEBACTERIUM DIPHTHERIAE pharmacol)
(TOXINS AND ANTITOXINS)

LEWENFISZ-WOJNAROWSKA, Teofila; BORKOWSKI, Marian T.; MIKIEWICZ, Barbara;
KAZMIEROWSKA, Zdzislawa

On colimycin therapy of infants with diarrheal syndromes caused by pathogenic strains of Escherichia coli. *Pediat. pol.* 37 no.11:1137-1145 '62.

1. Z II Kliniki Pediatricznej AM w Warszawie Kierownik: prof. dr
med. T. Lewenfisz-Wojnarowska.
(COLISTIN) (DIARRHEA INFANTILE) (ESCHERICHIA COLI INFECTIONS)

WILKOSZEWSKI, Edward; MIKIEWICZ, Barbara; ZALESKA, Krystyna

The content of diphtherial antitoxin in maternal serum and milk and in neonatal serum. II. *Pediat. pol.* 37 no.11:1157-1164 '62.

1. Z Kliniki Chorob Dzieci AM w Warszawie Kierownik: prof. dr med. R. Baranski i z II Kliniki Polozniczo-Ginekologicznej AM w Warszawie Kierownik: prof. med. I. Roszkowski.

(DIPHTHERIA ANTITOXIN)	(INFANT NEWBORN)
(MILK HUMAN)	(MATERNAL FETAL EXCHANGE)

WILKOSZEWSKI, Edward; BALUKIEWICZ, Irena; MIKIEWICZ, Barbara;
ROMICKA, Anna; KAZMIROWSKA, Zdzisława

Effect of rheumatic fever and glycocorticoid therapy on the titer of diphtherial antitoxins and typhoid agglutinina in the blood serum. Reumatologia (Warsz.) 3 no.3:221-224 '65.

1. Z I Kliniki Pediatricznej AM w Warszawie (Kierownik: prof. dr. med. R. Baranski), z Kliniki Pediatricznej Studium Doskonalenia Lekarzy AM i Instytutu Reumatologicznego w Warszawie (Kierownik: prof. dr. med. E. Wilkoszewski; Dyrektor Instytutu Reumatologicznego: dr. med. W. Brühl).

41821

S/044/63/000/001/038/053
AO60/AC00AUTHOR: Miklowicz, J.

TITLE: Estimating the common mean on the basis of samples from normal populations with differing dispersions

PERIODICAL: Referativnyy zhurnal, Matematika, no. 1, 1963, 19, abstract 1V73
(Zastoscw. mat., 1961, v. 6, no. 1, 119 - 126; Polish; summaries in Russian, English)

TEXT: The author considers k normal populations with a common mean value and dispersions: $\sigma_1^2, \sigma_2^2, \dots, \sigma_k^2$. From every population a sample with the size n_i ($i = 1, 2, \dots, k$) elements is taken, so that $\sum_{i=1}^k n_i = n$. One obtains a sample $z = (x_{11}, \dots, x_{1n_1}, x_{21}, \dots, x_{2n_2}, \dots, x_{k1}, \dots, x_{kn_k})$. From this sample one estimates the mean value of μ . μ' is called the minimax estimator of the parameter μ , if it minimizes $\sup_{\mu} R(\varphi, \mu)$, where

$$R(\varphi, \mu) = E \{ L[\varphi(z), \mu] | \mu \} \quad \text{and} \quad L(\varphi(z), \mu) = (\varphi(z) - \mu)^2.$$

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Estimating the common mean on the basis of

S/044/63/000/001/038/053
A060/A000

It turns out that the minimax estimator coincides with the estimator obtained by minimizing the dispersion of the weighted sum of random variables and has the form

$$\mu' = \frac{\sum_{i=1}^k \frac{n_i}{\sigma_i^2} y_i}{\sum_{i=1}^k \frac{n_i}{\sigma_i^2}},$$

where y_i is the mean of the sample of the i -th population.

L.L. Vilkauskas

[Abstracter's note: Complete translation]

Card 2/2

MIKIEWICZ, J. (Wroclaw)

Levels of confidence in Wroclaw taxonomy. Zastos mat 7 no.1:1-40 '63.

MIKIEWICZ, Tomasz

Recovery in aluminum-treated mild steel. Mechanika Poznan
no. 4:121-151 '62.

MIKIEWICZOWA, Z.

BILEWICZ, St.; MIKIEWICZOWA, Z.

Four cases of anomalous reproduction in white mice. *Fol. biol.*,
Warsz. 2 no.2:113-121 1954.

1. Zakład Biologii Akademii Wychowania Fizycznego w Warszawie.
(PREGNANCY,
residual spermatozoa from previous pregn. causing subsequent
pregn. in white mice)
(SPERMATOCYTES,
residual spermatozoa from previous pregn. causing subsequent
pregn. in white mice)

MIKIJEVIĆ, DURO L.

Osnovi tehnologije i poznavanje robe. Beograd, Naučna knjiga. Vol. 1.
1954, 384 p.

SO: EWAL, Vol. 5, No. 7 July 1956

11/11/58, D. S. 11/11/58

YUGOSLAVIA/Chemical Technology - Chemical Products and Their H-24
Application, Part 3. - Fats and Oils, Waxes, Soaps,
Detergents, Flotation Agents.

Abs Jour : Ref Zhur - Khimiya, No 7, 1958, 22854

Author : Djuro L. Mikijelj
Inst : -
Title : Fats and Oils.

Orig Pub : Nova trgovina, 1956, 9, No 1, 43-50

Abstract : No abstract.

Card 1/1

11/11/58, D. S. 11/11/58

YUGOSLAVIA/Chemical Technology - Chemical Products and Their H-24 **APPROVED FOR RELEASE: 06/14/2000** **CIA-RDP86-00513R001134130003**
Application, Part 3. - Fats and Oils, Waxes,
Soaps, Detergents, Flotation Agents.

Abs Jour : Ref Zhur - Khimiya, No 7, 1958, 22909

Author : Djuro L. Mikijelj
Inst : -
Title : Soaps and Other Means for Keeping Clean.

Orig Pub : Nova trgovina, 1957, 10, No 4, 263-268

Abstract : No abstract.

Card 1/1

WIKIN, V.

Experiences with adjustable mechanical drills. p. 245. *Travaux de l'Institut de physique de l'Académie des sciences de l'URSS*, (Ministerstvo stroitel'stva i stroyeniya) Praha. Vol. 2, no. 1, June 1958.

1958 : *Travaux de l'Institut de physique de l'Académie des sciences de l'URSS*, Vol. 2, no. 1, June 1958.

MIKIL..CHKO, A.N.; YASTRZHEMSKIY, V.D.

System for measuring amplitude and phase oscillations at
different points in a diffuser. Izv. vys. ucheb. zav.;
radiotekh. 6 no.5:564-566 S-O '63. (MIRA 17:1)

1. Rekomendovano kafedroy radioveshchaniya i elektroakustiki
Odesskogo elektrotekhnicheskogo instituta svyazi.

MIKIN, G.P.

Design of an indicator-hand frequency meter. Energetik 5 no.8:38-39
Ag '57. (MIRA 10:10)

(Frequency measurements)

MIKIB, P.P.

Obligations fortified by action. Tekst.prom.8 no.2:7-8 P'48.
(MLRA 8:11)

1. Direktor fabriki imeni Frunze
(Textile industry)

MIKINA, V.D.

Errors in testing calorimeters. Trudy inst.Kom.stand., ser i iza.
prib. no.63:30-42 '62. (MIRA 15:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii
imeni D.I.Mendeleyeva.
(Calorimeters--Testing)

S/589/62/000/063/006/021
E032/E514

AUTHOR: Mikina, V.D.
TITLE: Thermal regulation in a calorimetric system
SOURCE: USSR. Komitet standartov, mer i izmeritel'nykh priborov. Trudy institutov Komiteta, no.63(123). Moscow, 1962. Issledovaniya v oblasti teplovykh i temperaturnykh izmereniy. 63-72

TEXT: The author is concerned with combustion calorimeters having isothermal or adiabatic screens. An attempt is made to estimate the accuracy with which the screen of the calorimeter must be thermostated or regulated. In the case of an isothermal screen, the basic requirement is that if the temperature in the calorimeter is measured to ± 0.0001 deg, then the heat transfer correction should not change by more than ± 0.0001 deg. A simple algebraic scheme is outlined whereby permissible temperature fluctuations in the screen may be evaluated, and it is estimated that in the case of the precision VNIIM calorimeter this amounts to ± 0.0003 deg. In addition, experiments have been carried out using various temperature regulating circuits. The following

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Thermal regulation in a ...

S/589/62/000/063/006/021

E032/E514

schemes were tried and are recommended: 1) temperature of the screen below room temperature - two T -15 (TS-15) thermostats, and 2) temperature of the screen above room temperature - internal thermostat system consisting of two heaters and a mercury in glass on-off switch ("contactor"). If the temperature changes in the screen are to be kept to within $\pm 0.001-0.002$ deg (screen above room temperature), then a photoelectric scheme incorporating a thyatron and resistance thermometers turns out to be suitable. The photoelectric device can also be used to produce an adiabatic screen. In this device the temperature probe is a platinum thermometer connected to a TM-1 bridge with a M24/1 galvanometer (10^{-7} V/mm at 1 m). When the temperature changes an off-balance current flows through the galvanometer, whose light spot is focused on a photocell in such a way that a change in its position gives rise to a change in the output of the photocell. This is then fed into the thyatron-relay circuit mentioned above. There are 2 figures.

ASSOCIATION: VNIIM

SUBMITTED: March 25, 1961

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42674

S/589/62/000/063/003/021
E032/E514

115 10

AUTHOR: Makina, V.D.

TITLE: Errors in the testing of calorimeters

SOURCE: USSR. Komitet standartov, mer i izmeritel'nykh priborov. Trudy institutov Komiteta. no.63(123). Moscow, 1962. Issledovaniya v oblasti teplovykh i temperaturnykh izmereniy. 30-42

TEXT: The testing of calorimeters for the determination of the heats of combustion of liquid and solid fuels and organic substances is being carried out in accordance with the scheme approved by VNIIM. This scheme is based on three steps which differ in their purpose and accuracy and involve standard calorimeters of grade 1, standard calorimeters of grade 2 and working calorimeters. Grade 1 calorimeters are calibrated by an absolute method in which the heat is produced by a known electrical current and the heat capacity of the calorimeter is calculated from the power dissipated, the time during which the power is supplied and the temperature rise of the water with which the calorimeter is filled. For the particular set-up used

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Errors in the testing of calorimeters S/589/62/000/063/003/021
E032/E514

at VNIIM the estimated RMS errors are as follows: 1) current - $\pm 2 \cdot 10^{-3}\%$, voltage across the heating coil - $\pm 10^{-3}\%$, time - $10^{-3}\%$, temperature change (mercury in glass thermometer) - $\sim \pm 5 \cdot 10^{-3}\%$. The overall error in the heat capacity of the calorimeter then turns out to be $7 \cdot 10^{-3}\%$. When the heat capacity of the calorimeter obtained in the calibration is used in calculating the heat of combustion, the difference in the experimental conditions must be taken into account. Thus, in the calibration no combustion takes place inside the bomb and the energy is liberated outside rather than inside the bomb and, finally, the rate at which the heat is liberated is very different in the two cases. It is estimated that the final accuracy of the heat of combustion of standard benzoic acid using the VNIIM equipment is $\pm 0.01\%$. Detailed review of published information leads to the conclusion that benzoic acid may be classified as a satisfactory standard substance. The second part of this paper is concerned with the determination of the heat capacity of second grade and working calorimeters by a relative method in which this quantity is determined by using a standard material of known heat of

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Errors in the testing of calorimeters S/589/62/000/063/003/021
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combustion. Here the main errors are in measuring the weight of the standard substance and the temperature rise (in addition to the error in the heat of combustion of the standard). It is shown that whereas according to the VNIIM scheme the RMS error in the heat capacity should be $\pm 0.03\%$, the actual experimental error may be reduced to $\pm 0.014\%$. Even in the case of working calorimeters, the possible accuracy is better than that of the above scheme, namely, $\pm 0.05\%$. The general conclusion is that all these measurements can be carried out to a higher accuracy than that specified in the VNIIM scheme referred to above. Practical realisation of the accuracy quoted above for working calorimeters is prevented by the fact that Soviet industry is not producing suitable calorimeters. There is 1 figure. ✓

ASSOCIATION: VNIIM

SUBMITTED: March 3, 1961

Card 3/3

BANKOWSKI, Mirosław; MIKINKA, Franciszek.

Pulmonary tuberculosis in aged. Gruzlica 23 no.4:271-276 Apr '55.

1. Z Terenowych i Centralnej Poradni Przeciwgruzliczej w
Lodzi Dyrektor: dr Jadwiga Szustrowa Lodzi ul. Jasna 36 b.
(TUBERCULOSIS, PULMONARY, in aged)

MIKIRCV, A.Ye.

Estimation of ozone concentration at altitudes between 5 and 10 km. during night launches of geophysical rockets. Geomag. i aer. no.6:1120-1123 1965. (file 14)

1. Institut prikladnoy geofiziki. Submitted January 9, 1965.

L 11190-66 FSS-2/EWT(1)/FCC GW

ACC NR: AP6002764

SOURCE CODE: UR/0203/65/005/006/1120/1123

AUTHOR: Mikirov, A. Ye.

25
30
B

ORG: Institute of Applied Geophysics (Institut prikladnoy geofiziki)

TITLE: Evaluating the ozone concentration at altitudes of 44-102 km during night launchings of geophysical rockets

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 6, 1965, 1120-1123

TOPIC TAGS: ozone, meteorologic rocket

ABSTRACT: Measurements of lunar radiation intensity are used as a basis for determining the ozone concentration at altitudes of 44-102 km, i.e. at altitudes above the maximum concentration under nocturnal conditions. Curves are given comparing the experimental determination of ozone concentration with the theoretical values calculated with respect to altitudes. The experimental values are somewhat higher than the theoretical values based on photochemical equilibrium conditions. The total ozone concentration at altitudes above 44 km is found to be $\sim 0.4 \cdot 10^{-19}$ molecules/cm², which agrees with the data in the literature. However, it is pointed out that the

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UDC: 551.510.535:629.195.2

L 14190-66

ACC NR: AP6002764

accuracy of these data is extremely low. An account of all factors contributing to the error in the final results gives an accuracy of $\pm 100-120\%$. In conclusion I consider it my duty to thank S. N. Poloskov, A. N. Kasatkin, S. V. Fepolovskiy (deceased), A. Ya. Khaletskiy and A. A. L'vova for assistance in the work and useful consultation. Orig. art. has: 4 figures, 6 formulas.

SUB CODE: 08/ SUBM DATE: 05Jan65/ ORIG REF: 006/ OTH REF: 009

Card 2/2

MIKIROV, A. Ye.

Photoelectric method for studying distribution of cloud particle dimensions. Izv. AN SSSR. Ser. geofiz. no. 1:104-108 Ja '57.
(MIRA 10:3)

1. Akademiya nauk SSSR. Institut prikladnoy geofiziki.
(Clouds)

Mikirov, A. Ye

AUTHOR: Mikirov, A. Ye.

49-4-10/83

TITLE: On measuring the spectrum of particle distribution in clouds and mists. (Ob izmerenii spektra raspredeleniya chastits v oblakakh i tumanakh).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1957, No.4, pp. 512-515 (USSR)

ABSTRACT: Analysis of laboratory investigations carried out in 1952 and 1953 by the author showed that it is possible to develop a photo-electric method for measuring the dimensions of particles of liquid aerosols of diameters of 2μ and higher (Ref.2). The essence of the proposed photo-electric method for investigating the spectrum of distribution of particles in clouds and mists consists in using the method of the darkened field in combination with skilful utilisation of the scattering index. An optical system consisting of a light source, a condenser lens, a diaphragm, a second lens and another diaphragm (Fig.1), produces a parallel beam of light of the necessary diameter which passes through the space to be investigated and is covered by a black screen behind which a cathode photo-multiplier is placed. If there are any particles in the light beam, the light is stopped by the black screen

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49-4-10/23
On measuring the spectrum of particle distribution in clouds and mists.

and does not hit the photo cathode. Perpendicular to the light beam a tube T is placed in which the aerosol flows; the particles which flow from the tube into the light beam bring about scattering of the light and the light scattering on the particles hits the photo cathode and brings about a voltage impulse, the amplitude of which depends on the particle size. These voltage impulses are fed into a wide-band amplifier, the output of which is connected to a six-channel amplitude analyser. Field tests with this apparatus have been carried out on the El'brus Mountain (3050 m altitude); these consisted of measuring the spectrum of the distribution of particles in natural clouds and gave positive results. The spectrum was measured of the distribution of particles in several clouds during calm weather every five minutes, whereby the measurement itself took 20 secs. Figs. 5 and 6 represent the spectra of the distribution of particles in two clouds based on 8874 and 9950 particles respectively. The obtained experimental data did not permit establishing a relation of the change in the spectral distribution of the particles as a function of time. Agreement of experimental data with theoretical calculations confirm

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On measuring the spectrum of particle distribution in clouds and mists. 49-4-10/23

that the formula of K. S. Shifrin (Ref.3) expresses with adequate accuracy the indicatrix of the scattering of the particles. It can be seen from the calibration curve that the apparatus permits measuring particle sizes from 2 μ upwards.

There are 6 figures, 1 table and 5 references, 4 of which are Slavic.

AVAILABLE: November 28, 1956.

ASSOCIATION: Ac.Sc. U.S.S.R. Institute of Applied Geophysics.
(Akademiya Nauk SSSR Institut Prikladnoy Geofiziki).

AVAILABLE: Library of Congress.

Card 3/3

AUTHOR: Mikirov, A. Ye.

49-5-17/18

TITLE: On the possibilities of separate study of the spectrum of distribution of liquid particles and the solid fractions of aerosols. (O vozmozhnosti razdel'nogo izucheniya spektra raspredeleniya chastits zhidkoy i tverdoy fraktsiy aerorozley).

PERIODICAL: "Izvestiya Akademii Nauk, Seriya Geofizicheskaya" (Bulletin of the Ac.Sc., Geophysics Series), 1957, No.5, pp.689-691 (U.S.S.R.)

ABSTRACT: Various papers have been published which are devoted to automatic continuous photoelectric determination of the distribution spectrum of particles. These methods are based on utilising the scattering indicatrix of the particles whereby the count and the dimensions of the particles are effected independently of the aggregate state. The author of this paper believes that the scattering indicatrix can also be utilised for separate measurement of the number and dimensions of the liquid and solid aerosol particles. Experiments carried out by Fedorova, Ye. O. (5) have shown that particles of non-spherical shape scatter the light in a direction opposite to the propagation of the light beam four to five times more intensively than particles of spherical shape. Whilst for the liquid particles the

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MIKIROV, A.YE.

AUTHOR: Mikirov, A.Ye.

49-12-14/16

TITLE: Analyser of Particles of Clouds and Precipitates
(Analizator chastits oblakov i osadkov)

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya Geofizicheskaya,
1957, no.12, pp. 1529 - 1531 (USSR)

ABSTRACT: The study of the spectrum of distribution of the liquid and solid fractions in clouds can be effected by means of a photo-electric method, dealt with in an earlier paper of the author (Ref.2); it is based on the principle that the scattering of light by non-spherical particles in the direction opposite to the direction of the beam is four to five times larger than for spherical particles. If the light scattered by the particles is captured by means of photo-multipliers, one of which is located in the direction of the light beam and the other one perpendicular to that direction, it is possible to distinguish between liquid and solid particles from the ratio of the impulses. Thus, two impulses are obtained, the ratio of which determines the sought value. If a cathode-ray tube is used for analysis, an inclined line will be obtained on the screen in the ideal case and the inclination of the line will determine the ratio of the impulses and thereby permit establishing whether a particle was liquid or solid, whilst the amplitudes

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Analyser of Particles of Clouds and Precipitates. 49-12-14/16

of the impulses give the dimension of the particle. The image has to be photographed which causes considerable difficulty. However, this difficulty can be overcome if the line is substituted by a point, by means of a circuit, the block schematics of which is described in this paper. This principle has been used for building an analyser which permits distinguishing liquid from solid particles. It also permits determination of the dimensions of the liquid and the solid particles, investigating and establishing the relations between the dimension and the charge of precipitate particles and determination of the dimension as well as the charge of the particles. There are 3 figures and 5 Slavic references.

ASSOCIATION: Ac.Sc. USSR, Institute of Applied Geophysics.
(AN SSSR Institut prikladnoy geofiziki)

SUBMITTED: May 20, 1957.

AVAILABLE: Library of Congress.

Card 2/2

M. K. ROY, A. Ye

Effect of the addition of an oil droplet phase at
atmospheric pressure. J. J. Kirkby, A. E. Murray, and H. J.
Lambert. *Proc. R. Soc. London, Ser. A*, 1958, 248, 1-12.
The fog produced by water vapor was increased by 40%
when the vapor was irradiated by 0.3 curies of Po-210 for 40
min. whether sources of a particular source a few days ago.
The fog persisted for several hrs. J. J. Kirkby

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SOV/49-58-10-13/15

AUTHOR: Mikirov, A. fe.

TITLE: On the ~~Asymmetry~~ of the scattering ~~Indicatrix~~ of a Transparent Sphere (Ob asimmetrii indikatrisy rasseyaniya prozrachnogo shara)

PERIODICAL: Izvestiya Akademii Nauk SSSR, seriya geofizicheskaya, 1958, Nr 10, pp 1258-1261 (USSR)

ABSTRACT: The scattering function may be written in the form:

$$i(\beta) = \frac{\rho^2}{4} \left[\frac{\tau(\beta)}{2} + \rho^2 (1 + \cos \beta)^2 \left(\frac{J_1(\rho \sin \beta)}{\rho \sin \beta} \right)^2 \right] \quad (1)$$

where $i(\beta)$ is the intensity of light scattered by the drop in the direction β , $\rho = 2\pi r/\lambda$, $\tau(\beta)$ is a term which takes into account the geometrical scattering function, and

$$\rho^2 (1 + \cos \beta)^2 \left(\frac{J_1(\rho \sin \beta)}{\rho \sin \beta} \right)^2 \quad \text{takes into account}$$

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On the Asymmetry of the Scattering ~~Indicator~~ of a Transparent Sphere diffraction effect. The interference term is neglected. The asymmetry coefficient is defined by:

$$\eta = \frac{F\left(\frac{\pi}{2}\right)}{F(\pi) - F\left(\frac{\pi}{2}\right)} = \frac{\text{forward scatt.flux}}{\text{backward scatt.flux}} .$$

It is pointed out that the oscillatory character of the asymmetry coefficient as found by Paraujpa et al (Ref.2) is not real but due to the method of calculation which these authors adopted. The present author has measured the asymmetry coefficient using the apparatus shown in Fig.1. His results are shown in Fig.5 which gives η as a function of ρ . It is clear from this figure that for $\rho > 20$ the asymmetry coefficient is a continuous function of η .

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On the Asymmetry of the Scattering ~~Indicatrix~~ of a Transparent Sphere

There are 5 figures, 2 tables and 3 references; 1 of the references is Soviet, 1 English and 1 German.

ASSOCIATION: Akademiya nauk SSSR, Institut prikladnoy geofiziki
(Institute of Applied Geophysics, Academy of Sciences USSR)

SUBMITTED: February 5, 1958.

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SOV/49-59-14/25

AUTHOR: Mikirov A. Ye.

TITLE: On Small Angles of the Scattering Indicatrix (O mal'kh uglokh indikatrissy rasseyaniya)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya geofizicheskaya, 1959, Nr 2, pp 248-295 (USSR)

ABSTRACT: K. S. Shifrin (Ref 4) pointed out in 1951 that measurements of the scattering indicatrix at various angles may, in principle, be used to determine the size distribution of the scattering particles in aerosols. This suggestion was repeated by Shifrin in 1959 and at the same time the present work was started at the Institute of Applied Geophysics, Academy of Sciences USSR. Let $f(r)$ be the size distribution of particles in a volume V containing N particles. The intensity of light I scattered by particles of radius r , in the direction of an angle β is given by Shifrin's equation:

$$I(\beta) = \frac{1}{2} \left[\frac{f(\beta)}{1} + f^2(1 + \cos \beta) \cdot \frac{J_1^2(p \sin \beta)}{p \sin \beta} \right] \quad (1)$$

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On Small Angles of the Scattering Indicatrix

where $\rho = 2\pi r/\lambda$, λ - is the wavelength, $\tau(\beta)$ is a term which represents scattering of light according to principles of geometrical optics, and $J_1^2(\rho \sin \beta)/\rho^2 \sin^2 \beta$ is a term which gives the diffraction part of the scattering indicatrix. For angles $\beta = \lambda/r$, the term $\tau(\beta)$ in Eq (1) may be neglected, since it is very small compared with $J_1^2(\rho \sin \beta)/\rho^2 \sin^2 \beta$. For particles with $\rho = 20 - 30$, $\tau(\beta) = 33.2$, and $J_1^2(\rho \sin \beta)/\rho^2 \sin^2 \beta \approx 2 \times 10^5$ at $\beta = 3^\circ$. Consequently the intensity of light scattered by a particle of radius r in the direction of angle β , where $\beta \leq 5 - 5^\circ$, is given by:

$$I(\beta) = \frac{I_0^2}{\beta^2} J_1^2(\rho \beta)$$

The author assumes that in the volume under investigation there are N particles with the size distribution $f(r)$ and he discusses possible theoretical approaches in calculation of $N(r)$ from $I(\beta)$. The problem is simplified if the form of

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SOV/43-59-2-14/25

On Small Angles of the Scattering Indicatrix

the size distribution function $f(r)$ is assumed. The form of $f(r)$ was discussed by Khrgian and Mazin (Ref 8), who found that the function

$$f(r) = Ar^2 e^{-br}$$

describes well the size distribution of particles in clouds. Since Shifrin and Polyakova (Ref 9) found that the power exponent of r is greater than 2 and later work (Ref 11) showed that this value varies between 5 and 8 and is only very rarely equal to 2, the present author used a more general function:

$$f(r) = Ar^k e^{-br}$$

The experimental apparatus used to find $f(r)$ from $I(\beta)$ is shown schematically in Fig 8. The source of light consists of a K-7 lamp, a condenser, a diaphragm D and a long-focus objective. A parallel beam of light produced by this source

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SOV/49-59-2-14 788

On Small Angles of the Scattering Intensity

is defined by diaphragms D_1 and D_2 . The diaphragm D_1 is a black screen with a small aperture, it is placed at a distance of 60-80 cm from the diaphragm D_2 . The receiver consists of a lens A , at whose focus there is either a photographic camera, a rotating disc with apertures together with a photomultiplier, or a photo-resistance. The aerosol is placed between D_1 and A . Fig 9 shows four photographs which, from top to bottom, give the results obtained in pure air, in a monodisperse aerosol, in a cloud, and in tobacco smoke. Lycopodium was used to produce the monodisperse aerosol. Calculations made using the data provided by the diffraction rings of Fig 9 and comparison with the results obtained by microscopic measurement of lycopodium particle diameters, showed that the apparatus of Fig 8 yielded results with an error of 5 - 7%. Dimensions of particles in the cloud were calculated by two methods: graphical construction of the distribution function or a determination of the values μ and c , from three experimental points. The distribution of cloud particles was also measured by means of an optical flow method. Fig 10 gives the results of these measurements. The values of μ and c were found to be 8 and 1.8 respectively. For r_{\max} the two methods of calculation give the same value.

Card 4/5

37/49-59-2-14/25

On Small Angles of the Scattering Indicial

The author points out that the results of measurements by the method described by him and by flow methods agree only when the particles are thoroughly mixed. For tobacco smoke the author used the data of Fig 9, to find $r_{max} = 0.3\mu$. It was not possible to compare this result with measurements by some other method but the published data show that r_{max} in tobacco smoke is of the order of 0.1-0.3 μ (Ref 10). There are 10 figures and 11 references, 9 of which are Soviet, 1 English and 1 translation from English into Russian.

ASSOCIATION Akademiya nauk USSR Institut prikladnoy fiziki
(Institute of Applied Physics Academy of Sciences USSR)

SUBMITTED: March 10 1950.

Card 5/5

3.5000

87975
S/049/60/000/010/011/014
E133/E414

AUTHORS: Dmitriyev, A.A., Mishina, M.I., Mikirov, A.Ye. and Cherenkova, Ye.P.

TITLE: The Influence of Cosmic Dust on Certain Solar Radiation Characteristics in the Atmosphere

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya geofizicheskaya, 1960, No.10, pp.1518-1528

TEXT: Kalitin has shown that there is a small decrease in the measured solar radiation correlated with the date of the Perseids (Ref.1). Zacharov found that the minimum measured value occurred three days after the maximum of the Perseid stream but that the time depended on the wavelength used (Ref.2). Giovanelli (Ref.3) calculated the size and number of the particles responsible, and information on these data has also been obtained from radar (Ref.5) and rocket (Ref.6) observations as well as from collection of magnetic material (Ref.7) and work on the zodiacal light. It seems likely that the dust in the troposphere derives

x

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S/049/60/000/010/011/014
E133/E414

The Influence of Cosmic Dust on Certain Solar Radiation Characteristics in the Atmosphere

from the Earth, whereas that in the stratosphere is of interplanetary origin. An equation is derived giving the distribution of dust with height in the presence of convection (Eq.(7)). This formula is considerably more complicated than the exponential expression which holds in the absence of convection. A lower limit for the number of dust particles in the stratosphere is then derived, assuming that tropospheric convection does not extend into the stratosphere. It is found that the mass of particles entering the Earth's atmosphere is $5.5 \times 10^{-15} \text{ gm/cm}^2 \text{ sec}$. The authors next consider the effect of the dust content on the solar halo and in this connection derive an equation to represent it. Fig 1 is obtained from this equation and consists of a plot of halo brightness against height for various wavelengths. (The observations were made from an aircraft.) The atmospheric transmission coefficient is closely connected with halo brightness but effects in the lower atmosphere can be sufficiently large to blot out effects in the upper atmosphere. From data obtained in

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E133/E414

The Influence of Cosmic Dust on Certain Solar Radiation Characteristics in the Atmosphere

the period 1933 to 1955, it is found that the intensity of solar radiation seems to oscillate with a period of 5 to 7 days as well as having minima during meteor showers. It is shown that there is a linear correlation between the intensity of short wavelength solar radiation and the number of meteors per hour found by radar observations. A correlation was also found between oscillations in solar radiation and radio-echo observations, although maxima and minima of the two curves were displaced. The authors finally calculate the ratio of the intensity of light scattered by meteoritic dust to that scattered by air molecules at varying heights. The results are shown in Fig.6 for different angles of scattering and different elapsed times after the initial influx of the particle stream. It was found that the ratio had a constant maximum at 87 km for all angles of scattering near the level of the noctilucent clouds (Fig.7). There are 7 figures, 1 table and 20 references 7 Soviet and 13 non-Soviet.

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87975

S/049/60/000/010/011/014

E133/E414

The Influence of Cosmic Dust on Certain Solar Radiation
Characteristics in the Atmosphere

ASSOCIATION: Akademiya nauk SSSR Institut prikladnoy geofiziki
(Academy of Sciences USSR Institute of Applied
Geophysics)

SUBMITTED: December 25, 1959

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4

87975
S/049/60/000/010/011/014
E133/E414

The Influence of Cosmic Dust on Certain Solar Radiation Characteristics in the Atmosphere

1 - Halo region between 5°12' and 4°27';
2 - ditto for 2°11' to 1°44'.
The dashed curve marked 1' represents the Rayleigh component for the curve 1. The dependence of the halo brightness on height for different wavelengths (μ). 3 - 0.4; 4 - 0.45; 5 - 0.55. The dashed curve marked 3' is the Rayleigh component for curve 3. The left scale refers to curves 1, 1' and 2; the right scale refers to curves 3, 3', 4 and 5.

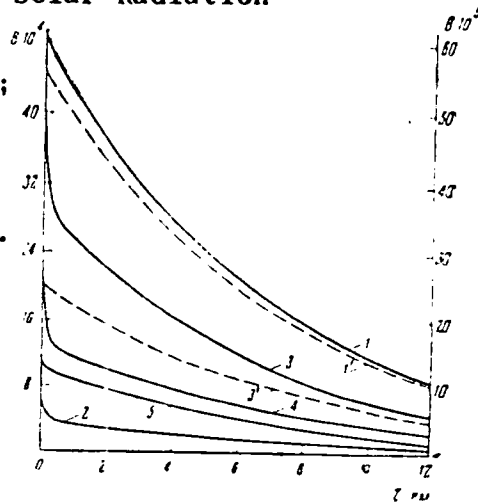


Fig.1. Halo brightness as a function of height (km) at $\lambda = 0.4 \mu$

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S/049/60/000/010/011/014

E133/E414

The Influence of Cosmic Dust on Certain Solar Radiation Characteristics in the Atmosphere

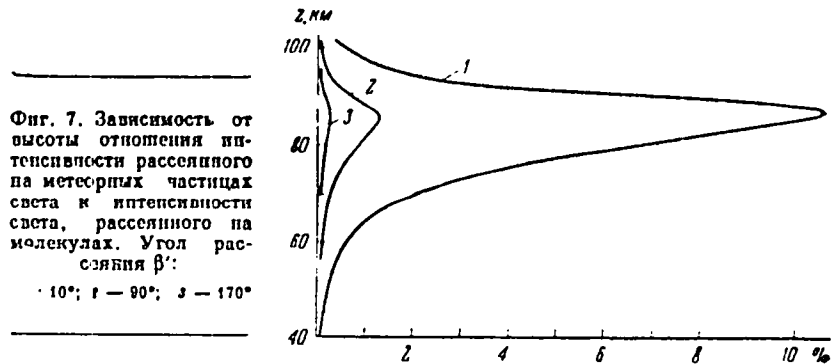


Fig.7. Dependence of the ratio of the intensity scattered by meteor particles to the intensity scattered by molecules for $\beta' = 10^\circ$ (curve 1), 90° (curve 2) and 170° (curve 3), where $\beta' = (180^\circ - \text{angle of scattering})$.

Card 6/6

85431

S/170/60/003/011/002/016
B019/P056

11.1210

AUTHORS: Kusakov M. M. Koshevnik A. Yu. Mikirov, A. Ye.

TITLE: Investigation of the State of Water in a Hydrocarbon Fuel
by Means of Light Scatter

PERIODICAL: Inzhenerno-fizicheskiy zhurnal. 1960 Vol. 3, No. 11
pp. 11-17

TEXT: On the basis of experimental results concerning the scattering of white light, the forming of micro-drops in a fuel of the type T-1 (T-1) in the case of a temperature decrease is investigated in the present paper. In the first part, the authors investigate the influence exerted by the drop dimensions upon light scatter by means of the Rayleigh equation. Next, the experimental set up is described. The scattered light incides upon a rotating spirally perforated disk. The light passing through the perforation incides upon the cathode of a photomultiplier. Fig. 4 shows the scattering as a function of the angle for the fuel which was saturated with water at 50°C (Curve 1) and at 20°C (Curve 2). Scattering was measured at 20°C. From the further considerations it follows that

Card 1/2

85431

Investigation of the State of Water in a Hydrocarbon Fuel by Means of Light Scatter S/170/60/003/011/002/016
B019/B056

If the fuel is cooled microdrops of the order of 550 to 600 microns are formed and that they attain a concentration of several tens of millions per cubic centimeter. Further the conclusion is drawn that with rapid cooling of a closed system the excess of water is distributed uniformly over the emulsion phase and the walls of the container. There are 5 figures, 1 table, and 8 references: 4 Soviet, 2 German, and 3 US.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR g Moskva
(Institute of Petroleum-chemical Synthesis of the AS USSR
Moscow)

SUBMITTED: February 4 1960

Card 2/2

X

MIKIROV, A. Ye.

"Aerosole Scattering Coefficient Measurement at the 80-100 km"

Soviet Papers Presented at Plenary Meetings of Committee on Space Research
(COSPAR) and Third International Space Science Symposium, Washington, D. C.
23 Apr - 9 May 62.

MIKIREV, A. Ye., PROSKOV, S. M.

"Serpencular Solar Streams with Force Free Magnetic Fields"

Soviet Papers Presented at Plenary Meetings of Committee on Space Research
(COSPAR) and third International Space Symposium, Washington, D. C.,
23 Apr - 9 May 62

L1911

S/560/62/000/013/007/009
I046/I242

2575)

AUTHOR: Likarov, A. Ye.

TITLE: Sky luminance and the scattering coefficient of
the upper atmosphere

SOURCE: Akademiya nauk SSSR. Iskusstvennyy sputnik
Zemli. no.13. Moscow, 1962, 97-106

TEXT: The luminance of the day-time sky at various heights
was measured in four directions with differential photoelectric
photometers. In each device, at 10° beam of indirect light (the
direct sunlight was cut off by means of a special shutter coupled
with a photoresistor) was intercepted by various combinations of
filters (3450, 4150, 5300 and 5850 Å), phosphors (luminance ranging

Card 1/3

S/560/62/000/013/007/009
I046/I242

Sky luminance and the...

from $0.5 \cdot 10^{-8}$ to $3.7 \cdot 10^{-8}$ stilb), and reducers (0, 4, 1, 10, and 100% transmittance) mounted on two rotating discs. One complete cycle of measurements consists of 24 separate measurements of 6 sec. The sensitivity of the device is $0.9 \cdot 10^{-9}$ stilb for integral light, $1.5 \cdot 10^{-10}$ watt.cm⁻².ster⁻¹.m⁻¹ for individual wavelengths. The measurable luminance range is from $0.5 \cdot 10^{-8}$ to $0.5 \cdot 10^{-5}$ stilb. The measurements show that in the intermediate latitudes in the USSR the aerosol content at altitudes from 80 to 100 km is considerably higher than in the northern latitudes. The scattering coefficient $\beta(\text{aer})$ attains its maximum at $h=92$ km in intermediate latitudes, and at $h=85$ km in northern latitudes. The earth is thus girdled by an aerosol layer ($\beta(\text{aer})$ from $5 \cdot 10^{-12}$ to $20 \cdot 10^{-12}$ cm⁻¹) above 80 km. At $h=100$ km, i.e., above the aerosol density maximum, $\beta(\text{aer})$ is

Card 2/3

S/560/62/000/013/007/009
I046/I242

Sky luminance and the...

still considerably higher than β (Rayleigh), indicating that the aerosol layer exists also at $h > 100$ km. There are 8 figures and 2 tables.

SUBMITTED: August 2, 1961

Card 3/3

34749

S 020/62/142 003, 010 02"
B142/B158

3,5150

AUTHOR: Mikirov, A. Ye.

TITLE: The aerosol layer in the upper atmosphere

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 3, 1962, pp. 1-3

TEXT: An aerosol layer surrounding the earth at an altitude of 80 km or more was detected by brightness measurements in the upper atmosphere. Brightness investigations of the daylight sky were conducted at various altitudes by photoelectric devices with a sensitivity of $\sim 0.5 \cdot 10^{-8}$ stilbs for the integral light, and $1.5 \cdot 10^{-10}$ w/cm²·steradian· μ for the individual wavelengths. The brightness measurements were made in the range $0.5 \cdot 10^{-8}$ - $0.5 \cdot 10^{-5}$ stilbs. The resulting graph shows that brightness is weaker, i. e., the aerosol density is lower, in northerly than in middle-latitudes. The optical thickness, and the Rayleigh and aerosol scattering coefficients could be calculated from the intensities in two wavelengths, or in two different scattering angles. After measuring the brightness of scattered light at the upper and lower boundaries of Card 1/8

S/020/62/142.005/016.02
B142/B138

The aerosol layer in the upper...

the aerosol layer, the optical thickness of the aerosol layer was calculated by the formula $\tau_{\text{aer layer}} = \tau_{\text{aer}} (n + \Delta n) - \tau_{\text{aer h}}$, where $\tau_{\text{aer layer}} = K(\rho) \pi \cdot r^2 \cdot N \Delta h$; N = number of particles per cm^3 , r = mean radius of scattering particles, $K(\rho)$ = Stretton-Houghton coefficient. Thus, it is possible to determine the coefficient of aerosol scattering, β_{aer} , which, with β_{Rayl} , and the coefficient of Rayleigh scattering, was plotted against altitude for high and middle-latitudes in the USSR. The curves show a maximum at 92 km for high, and at 86 km for middle-latitudes. β_{aer} is of the order of $5 - 20 \cdot 10^{-12} \text{ cm}^{-1}$. At 100 km, it is still a multiple of β_{Rayl} , which shows that the aerosol layer exists even at altitudes above 100 km. There are 2 figures and 3 references: 1 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: H. A. Milley, E. I. Callington, J. F. Bedinger, Trans. Am. Geophys. Union, 34, No. 5 (1954); O. E. Berk, J. Geophys. Res., 60, No. 3 (1955).

+

Card 2/4

The aerosol layer in the upper...

S/020/62/142/003/016/027
B142/1138

ASSOCIATION: Institut prikladnoy geofiziki Akademii nauk SSSR (Institute of Applied Geophysics of the Academy of Sciences USSR)

PRESENTED: September 4, 1961, by Ye. K. Fedorov, Academician

SUBMITTED: September 2, 1961

Legend to Fig. 1: I - north latitude, II - middle-latitude. y-axis: km, x-axis: stilb.

Legend to Fig. 2: I - β_{aer} for high latitudes, II - β_{aer} for middle-latitudes, III - β_{Rayl} .

+

Card 3/4

POLOSKOV, S.M.; MIKIROV, A.Ye.

Electrophotometry of a selected region of the outer solar corona in the visible spectral region during the total solar eclipse of February 15, 1961. Geomag. i aer. 3 no.5:803-811 S-0 '63. (MIRA 16:11)

1. Institut prikladnoy geofiziki AN SSSR.

L'VOVA, A. A.; MIKIROV, A. Ye.; POLOSKOV, S. M.

"Rocket measurements of ozone profiles above the maximum density level during the total solar eclipse of Feb 15, 1961."

report submitted for 5th Intl Space Science Symp (COSPAR), Florence, Italy, 12-16 May 64.

E-17543-65 FSS-2/ENT(1)/EEC(m)/ENG(v)/FCG/EEC-4/EEC(t)/ENA(h) Po-4/Po-5/
 Pa-4/Pae-2/Pc-10/Peb/PL-4 SSD(a)/SSD/AFWL/ESD(t) GW
 ACCESSION NR: AP5000524 8/0203/64/004/006/1082/1088

AUTHOR: L'VOYS, A. A.; Mikirov, A. Ye.; Poloskov, S. M.

TITLE: Rocket investigations of ozone distribution with altitude above the maximum concentration level during the total solar eclipse of 15 February 1961 ^B

SOURCE: Geomagnetizm i aeronomiya, v. 4, no. 6, 1964, 1082-1088

TOPIC TAGS: ozone distribution, ozone distribution, rocket measurement, solar eclipse, total solar eclipse, sky brightness, electrophotometer, ultraviolet, electrophotometer

ABSTRACT: The results of geophysical-rocket measurements of sky brightness, made with an ultraviolet electrophotometer launched into the region of the lunar shadow during the total solar eclipse of 15 Feb 1961, are discussed. The ultraviolet photometer consisted of a scanning device operating as a photon counter. A "Loza" photomultiplier with a semitransparent cathode served as a radiation detector. The photometer had an operating range of 2200 to 3200 Å. The device scanned space in two mutually perpendicular directions, through 360° in one and through 30° in the other. The total measurement cycle

Card 1/2

L 17543-65

ACCESSION NR: AP5000524

lasted 30—33 sec. From the photoelectric multiplier the pulses were applied to the shaping device and then to the integrator. The integrator time constant was 0.5 μ sec. The method used for determining ozone content was that of oblique probing, and the data obtained therefore pertains to the upper-ozone layer for altitudes of 40—87 km. Fig. 1 of the Enclosure shows the ozone densities as a function of altitude. A detailed analysis of measurement errors leads the authors to conclude that, in determining ozone concentration, the maximum error did not exceed 7% for all altitudes. Orig. art. has: 7 figures and 4 formulas.

ASSOCIATION Institut prikladnoy geofiziki (Institute of Applied Geophysics)

SUBMITTED: 06 Jun 64

ENCL: 01

SUB CODE: AA, EC

NO REF SOV: 004

OTHER: 004

ATD PRESS: 315 2

Cord. 2/78

L 1743-01
ACCESSION NR : AF5000524

ENCLOSURE: 01

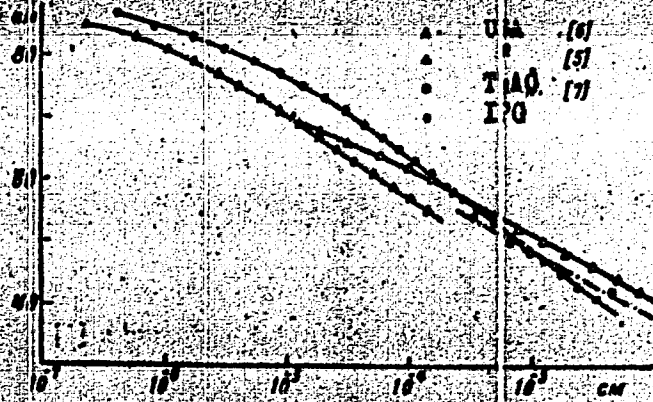


Fig. 1

Card 3/3

L 4911-65 FSS-2/EWT(1)/KEO(m)/EWI(v)/FCO/KEO(t)/EMA(h)

Pa-5/Pg-4/P1-4/P1-4/

Po-4/Pq-4/Psb GW

ACCESSION NR: AP5009647

UR/0293/15/003/002/0284/0296

AUTHOR: Nikiforov, A. Ya.

58
B

TITLE: Investigations of atmospheric brightness at altitudes of 120-450 km

SOURCE: Kosmicheskiye issledovaniya, v. 3, no. 2, 1965, 284-296

TOPIC TAGS: atmospheric brightness, brightness measurement, luminous flux measurement, photomultiplier, light filter, interference light filter, aerosol, aerosol scattering, FIR 3 radiation meter

ABSTRACT: The FIR-3 photoelectric radiation meter was used in rocket-borne investigations of the brightness of the upper atmosphere. Developed and produced at the Institute of Applied Geophysics of the Academy of Sciences USSR, this high-sensitivity detector is designed for measurements of small luminous fluxes in the near-ultraviolet, visible and near-infrared regions of the spectrum. The FIR-3 (see Fig. 1 of Enclosure) operates in the 10^{-5} - 10^{-1} -sb brightness range as a photoelectric photometer. It has a spectral range of 1700-1000 Å. To separate the individual components of the spectrum, glass light filters are mounted on a rotating disk

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L 19414-65

ACCESSION NR: AP5007647

which can accommodate 13 filters or polaroids and a luminophore which produces a brightness of the order of 5×10^{-9} sb at the multiplier photocathode. A variant uses interference light filters which are formed by shifting the objective, which is a double-lens telescopic system. An electric motor rotates the disk by means of a coaxial reducer with a transmission ratio of 1:500. The motor shaft is equipped with a modulation disk to insure chopping of luminous fluxes at a frequency of 400 cps. The measurement cycle of 4—5 sec comprises one complete revolution of the disk. The FIR-3 measuring circuit includes a two-stage a-c amplifier with synchronous detector and cathode follower at the outputs. To ensure selectivity, a resonance circuit, tuned to a modulation frequency of approximately 400 cps, is connected to the plate circuits of the amplifier stages. The reference voltage is transmitted to the detector from an electromagnetic oscillator whose rotor is fixed to the shaft of the electric motor. The number of rotor poles is equal to the number of slots in the disk. The output stage of the measuring circuit is the cathode follower which performs the matching with the telemetry system and limits the output voltage. This voltage varies from 6 ± 0.3 to 0 v as the photomultiplier bias lighting increases. Power to the photo-

Card 2/5

L 19414-65

ACCESSION NO: AP5009647

multiplier is supplied by a crystal. The output signal is fed to the
 multiplier. A 90 volt battery. The photo devices used in the
 investigation were mounted with their optical axes at angles of 30°
 and 80° from the zenith and were oriented away from the sun. The
 measurements were made in daytime along the solar vertical in the
 3200-3800 Å portion of the spectrum. The results showed that the
 brightness of the atmosphere illuminated by the sun decreases mono-
 tonically, starting from an altitude of 120 km; at an altitude of
 about 450 km it is equal to $1.5 \times 10^{-10} \text{ w}\cdot\text{cm}^{-2}\cdot\text{ster}^{-1}\cdot\mu^{-1}$. A com-
 parison of the measured values and the values calculated for an abso-
 lutely pure atmosphere indicated the presence of a large excess of
 energy brightness in the daytime sky, apparently caused by aerosol
 scattering of light. The aerosol scattering factor and the scattering
 density were evaluated. It was concluded that the maximum concentra-
 tion of the aerosol layer is at an altitude of about 80 km and
 that it extends to altitudes above 500 km. Orig. art. has: 1-12
 10 figures. [DW]

Card 3/5

L 49114-65

ACCESSION NR: AP5009647

ASSOCIATION: none

SUBMITTED: 06Mar64

ENCL: 01

SUB CODE: ES, OP

NO REF SOV: 017

OTHER: 012

ATD PRESS: 305

Card 4/5

L 49411-65

ACCESSION NR: AP5009647

ENCLOSURE: 01

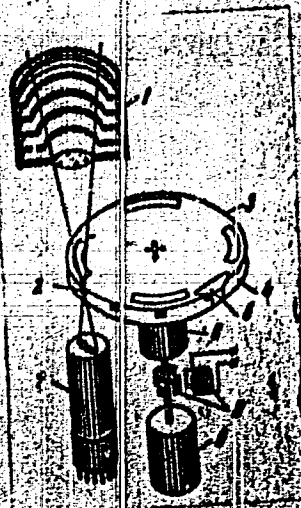


Fig. 1. WIK-3 radiation meter

- 1 - Objective; 2 - light filter;
- 3 - modulation disk; 4 - disk carrying light filters; 5 - luminescence;
- 6 - coaxial reducer; 7 - photo-multiplier; 8 - a-c voltage generator;
- 9 - electric motor.

Card 15/5

L 1049-56 ENT(1)/FSS-2/FCC/EWA(h) OS/JW

ACCESSION NR: AT5023561

UR/0000/65/000/000/0056/0056
38
35
BT1

AUTHOR: Mikrov, A. Ye.

TITLE: Estimate of ozone concentration at the height of 44-102 km from data obtained during night launchings of geophysical rockets

SOURCE: ^{12,44,55} Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 56

TOPIC TAGS: ozone, upper atmosphere, atmospheric probe, upper atmospheric radiation, lunar radiation

ABSTRACT: Results from measuring the brightness of the atmosphere at the altitude of 44-102 km by geophysical rockets are presented. In these experiments one of the measuring devices was oriented toward the moon. The distribution of ozone was determined from the measured intensities of lunar radiation in the spectrum range of 5850 and 4200 Å. The values obtained are somewhat higher than the theoretically calculated ones. At the elevation of 85 km the concentration at night is 10^3 times greater than in daytime.

Card 1/2

L 1049-46

ACCESSION NR: AT5023561

ASSOCIATION: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva (All-³Union Conference on Space Physics)

SUBMITTED: 44.55

ENCL: 00

SUB CODE: AA

NO REF SOV: 000

OTHER: 000

Card 2/2 RP

MIKIRTICHAN, G. M.

"Transistorized Power Amplifier," pp 4-38, ill, # ref

Abst: An analysis is given of the operation of a power amplifier for the frequency spectrum in which it is possible to disregard the effect of self-capacitance of the triode and transit time of the minority carriers of the charge. The material presented makes it possible to compute, with sufficient accuracy for practical purposes, a transistorized power amplifier stage.

SOURCE: Primeneniya Poluprovodnikov v Tekhnike Provodnoy Svyazi. Inform. Sbornik (The Use of Semiconductors in Wire Communications Engineering. Collection of Information), Moscow, Svyaz'izdat, 1957

Sum 1854

C.M. M. K. Krichan

9(4) PULSE I BOOK REPLICATION SOV/ASB9
Pul'sevyye tranzistornyye ustroystva i ikh primeneniye
Sverdlovo Ibrayevaya

Pul'sevyye tranzistornyye ustroystva i ikh primeneniye; sbornik
stat'ey (Semi-conductor Diodes and Triodes and Their Uses);
Collection of Articles) Moscow, Tsentr. byuro tekhn. inform.,
1956. 102 p. (Series: Datsibnaniya nauki i tekhniki)
1,700 copies printed.

Consulting Engineer: Ye. Z. Korobaykova; Ed.: G. P. Gama.

PURPOSE: This book may be useful to engineers in the field of
semiconductor electronics.

COVERAGE: The articles in this collection discuss problems in the
design, manufacture and application of new types of semi-
conductor devices. The diode-base diode is described and
results of the calculation of its characteristics are given.
P-n junction silicon and germanium triodes are discussed
and the characteristics of the type IIIa fused-junction triode
are presented. The effect of feedback in transistor amplifiers
on nonlinear distortions is covered. Operation of low-frequency
transistor amplifiers for individual units of multichannel
communication systems is explained and a discussion of
transistor units of the KPP 30/60 system is presented. Attention
is given to the problems of cooling transistor devices. There
is a review of Soviet and Western magazines and patents for
1956-1957 concerned with semiconductor devices and their
applications. There are no references.

TABLE OF CONTENTS:

Baridin, A. G., and G. M. Krichan. Transistor Amplifiers for Individual Units of Multichannel-Communication Systems The authors discuss the operation and characteristic of a low-frequency transistor amplifier used in a standard twelve-channel high-frequency system and derive formulas for calculating amplifier performance. A discussion of a transistor audio amplifier and a control- signal receiver is also presented.	61
Saryanov, N. V. Cooling of Semiconductor Devices The author describes a transistor chassis employing heat from transistor circuits and other operations that may be used in the design of transistor cooling elements.	74
Fridolis, G. G. Review of Certificates of Inventionship, Foreign Journals, and Patents for 1956 and 1957. Concerned with Semiconductor Devices and Their Applications	61
I. Transistor generators of sinusoidal oscillations	61
II. Flip-flop circuits and pulse generators	97
The author reviews Soviet and Western patents and magazines concerned with transistor circuits. He discusses the operation of various transistor oscillators, frequency dividers, modulators, and multivibrators.	

AVAILABLE: Library of Congress (YK7672.F73 P56)

AUTHORS: Arakelov, A.A. and Mikirtichan, G.M., Senior Researcher

TITLE: A Nonlinear Compensator of External Interference in a Remote Control System

PERIODICAL: Vestnik Vyazni, 1978, No. 12, pp. 4-7

ABSTRACT: The PK-1000 is a compensator for remote control systems. It consists of remote feed circuits working according to the feedback principle. The system and serves for compensating the errors which are caused by magnetic disturbances and interferences created by electrical lines fed by AC. Figure 1 shows the principle circuit diagram for explaining the principle of a single-stage PK-1000 compensator. It contains three transistors P1P, P2P and P3P. Measurements showed that the elements have different intensities with different lines and varied relative. Three or four stages are connected in series. For example, a two-stage compensator is used for a field strength of 100 V/m while the 100-stage compensator is used for a field strength of 10 V/m. Experimental models of three-stage versions of the PK-1000 compensator have been tested and shown to be effective since October 1977 where it remains in use.

Card 1/1

A Semiconductor Compensator of External E.M.F.'s

are measured. The PW-1000 compensator may be used on the
remote feed circuits of symmetric cables working with the con-
densing equipment KV-12, K-24 or K-60, and on open air com-
munication lines where the feed current is 0.1 to 100 amps
and where the amplitude of the e.m.f. does not exceed 70 to
75 volts.
There are 2 circuit diagrams and 1 photo.

ASSOCIATION: T-1111

Card 2/2

MURADYAN, Ashot Gerigenovich; SHAMSHIN, Valentin Maksimovich;
BORISOV, Aleksandr Ivanovich; MIKIRTICHAH, Grigoriy
Makertitovich; RIZKIN, I.Kh., otv. red.; VOLODARSKAYA,
V.Ye., red.; CHURAKOVA, V.A., tekhn. red.

[Use of transistors in long-distance telecommunication
equipment] Primenenie tranzistorov v apparature dal'nei
svyazi. Moskva, Sviaz'izdat, 1963. 71 p. (MIRA 16:7)
(Transistors) (Telecommunication--Equipment and supplies)

MIKIRTICHAJ, Grigoriy Mikirtichevich; KURJANTSEV, M.M., red.

(Portable transistorized superheterodyne receiver. Pere-
nosnyj tranzistornyj superheterodin. Moskva, Izd-vo
"Energija," 1964. 31 p. Marsovaia (MIA 17:8)
radiobiblioteka, no.528)

MIKIRTICHAN, G., Inzh.

Seven-band amateur superheterodyne. Radio no. 2:24-28 F 165.
(MIRA 18:0)

MIKIRTICHAN, G., insb.

Seven-band amateur superheterodyne receiver. Radio no. 6140-L2 Jo
'65. (MIRA 18:10)

"F... .."
 *

* Malabar
 * For Degree of Doctor of Technical Sciences

AYZENBERG, B.L.; ALFKSANDROV, G.N.; GRIBOV, A.N.; GRUZDEV, I.A.; DOMANSKIY, B.I.;
DUBINSKIY, L.A.; ZALESSKIY, A.M.; KOSTENKO, M.P.; KOSTENKO, M.V.;
LEVINSHTEYN, M.L.; MIKIRTICHEV, A.A.; MIKHAYLOVA, V.I.; NEYMAN, L.R.;
RUZIN, Ya.L.; SMIRNOV, V.S.; STEFANOV, K.S.; USOV, S.V.; KHOBERG, V.A.;
SHCHERBACHEV, O.V.

Professor M.D.Kamenskii; on his 80th birthday. Elektrichestvo no.7;
92-93 J1 '65. (MIRA 18:7)

SMIRNOV, V.S.; KOSTENKO, M.P.; NEYMAN, L.R.; KOSTENKO, M.V.; DOMANSKIY,
B.I.; ZALESSKIY, A.M.; USOV, S.V.; AYZENBERG, B.L.; DUBINSKIY,
L.A.; ALEKSANDROV, G.N.; GRIBOV, A.N.; GRUZDEV, I.A.; LEVINSHTEYN,
M.L.; MIKIRTICHEV, A.A.; MIKHAYLOVA, V.I.; RUZIN, Ya.L.; STEFANOV,
K.S.; KHOBERG, V.A.; SHCHERBACHEV, O.V.

M.D. Kamenskii; on his 80th birthday. Izv. vys. ucheb. zav.;
energ. 8 no.7:130-131 J1 '65. (MIRA 18:9)

L 22149-66

ACC NR: AP6012968

SOURCE CODE: UR/0143/65/000/007/0130/0131

AUTHOR: Smirnov, V. S.; Kostenko, M. P.; Neyman, L. R.; Kostenko, M. V.;
Domanskiy, B. I.; Zalesskiy, A. M.; Usov, S. V.; Ayzenberg, B. L.; Dubinskiy, L. A.;
Aleksandrov, G. N.; Gribov, A. N.; Gruzdev, I. A.; Levinshteyn, M. L.;
Mikirtichev, A. A.; Mikhaylova, V. I.; Ruzin, Ya. L.; Stefanov, K. S.;
Khoberg, V. A.; Shcherbachev, O. V.

ORG: none

TITLE: Honoring the 80th birthday of Mikhail Davidovich Kamenskiy

SOURCE: Izvestiya vysshikh uchebnykh zavedeniy. Energetika, no. 7, 1965, 130-131

TOPIC TAGS: electric power engineering, electric engineering personnel,
hydroelectric power plant, thermoelectric power plant

ABSTRACT: On 19 April 1965 Prof. Dr. Techn. Sci. Mikhail David-
ovich Kamenskiy celebrated his 80th birthday and the 55th anni-
versary of his active work as a power expert. Mikhail Davidovich
is a 1909 graduate of the Petersburg Polytechnic Institute - since
his graduation he has been associated with this institute, now
renamed Leningrad Polytechnic Institute, as an instructor. He is
a major scientist and specialist in electric power grids and sys-
tems. He has been a major contributor to the establishment of
the Leningrad Power Grid and various large thermal and hydro-

Card 1/2

L 22149-66

ACC NR: AP6012968

electric power stations and an active participant in the design and construction of high- and low-voltage power systems in many cities of the Soviet Union. During the Siege of Leningrad in World War II he was a member of the Municipal Party Defense Committee. Since the war Mikhail Davidovich has been head of the Chair of Electric Power Grids and Systems at the Leningrad Polytechnic Institute and has been working on the methods of calculating the economic regimes of power system operation and on the problems of the present-day development of urban power systems. M.D. Kamenskiy has published more than 80 works, including both original studies as well as textbooks that are popular in the Soviet Union and abroad. He is the chairman of the Section on Power Systems and Grids under the Leningrad Division of the Scientific and Technical Division of the Power Industry and organizer of and participant in many scientific-technical conferences and meetings. His merits as an educator of a new school of Soviet power engineers are equally large. Orig. art. has: 1 figure. [JPRS]

SUB CODE: 10 / SUBM DATE: none

Card 2/2 *dlw*

MEYERSON, M. Z.

"The problem of the mechanism of cortical influences on the functional condition of the motor apparatus." *Trudy* of the Chair of Human and Animal Physiology, Moscow State Biological Institute N. 1. *Stavitskiy, Moscow, 1950.* (No. 7, Feb 50)

SC: Sum. No. 131, 26 Aug 51 - Survey of Scientific and Technical Investigations Conducted at USSR Higher Educational Institutions (1950)

MIKIRTICHEVA, Z.Y., starshiy nauchnyy sotrudnik, kand.biol.nauk;
MENZHERETSKIY, A.I., starshiy nauchnyy sotrudnik, inzh.-podpolkovnik;
GROMOV, L.A., starshiy nauchnyy sotrudnik, kand.tekhn.nauk, inzh.-
polkovnik; OBOTOVA, M.N., mladshiy nauchnyy sotrudnik

Dressing materials made from cotton and rayon. Tekst.prom.
21 no.12:11-12 D '61. (MIRA 15:2)

1. Nauchno-issledovatel'skaya laboratoriya-3 Voenno-meditsinskoy
Ordena Lenina akademii imeni S.M.Kirova.
(BANDAGES AND BANDAGING)

S/081/62/000/024/044/052
B106/B186

AUTHORS: Mikirticheva, Z. V., Shluger, N. A., Menzheritskiy, A. I.,
Obotova, M. N.

TITLE: New bandage material from synthetic and artificial fibers

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 24 (II), 1962, 952,
abstract 24P1027 (Tekstil'n. prom-st', no. 5, 1962, 29-30)

TEXT: A number of gauze samples of synthetic and viscose fibers were developed. The test results showed that various combinations of synthetic and viscose fibers yield materials superior to cotton gauze as regards functional and therefore also medical properties. [Abstractor's note: Complete translation.]

Card 1/1

SHLUGER, N.A.; MIKIRTICHEVA, Z.V.; MENZHERITSKIY, A.I.

Cotton viscose gauze of loose weave structure. Voen.-med.zhur.
no.11:93 '64. (MIRA 18:5)

MENZHERITSKIY, A.I.; OSIPOV, A.V.; YEFREMOV, M.D.; KRUKOVSKIY, Ye.V.;
SHLUGER, N.A.; REPSHIL', A.P.; MITSKEVICH, V.M.; MIKIRTUCHEVA,
Z.V.; POLONSKIY, V.V.; OBOTOVA, M.N.; SEMENOVSKIY, A.A.;
GARASEVICH, G.I.; VAYNBERG, Ye.I.; DOMNICH, A.M.; LEVCHENKO, V.L.;
RAFAL'SON, V.D.; ROMANENKO, Ye.I.; SHPINER, Ye.I.; TEKLIN, V.G.

Innovations. Bum. 1 der. prom. no.2:58 Ap-Je '65. (MIRA 18:6)

MAKAROV, F. B., and G. S. KUDRYANTSEV

Atlas chertezhei letaiushchikh modelei. Moskva, Glav. red. aviat. lit-ry,
1938.

Title tr.: Atlas of drawings of flying airplane models.

NCF

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of
Congress, 1965.

MIKHAYLOV, V. P., Engr.

Cand. Tech. Sci.

Dissertation: "Dynamic Investigation of Airplane Landing." Institute of Aerodynamics of
Leningrad Technical Engineering University, Leningrad, U.S.S.R.

CC: Moscow, U.S.S.R. (Incl. 10/1/77)

MIKIRTUMOV, E. B., Engineer

Cand. Technical Sci.

"Dynamic Investigation of Airplane Landing." Sub 23 Apr 47, Military
Red Banner Order of Lenin Aeronautical Engineering Academy imeni Prof N. Ye.
Zhukovskiy

Dissertations presented for degrees in science and engineering in
Moscow in 1947.

SO: Sum.No. 457, 18 Apr 55

ZHABROV, A.A.; MIKIRTUMOV, E., redaktor; BELYAKOV, A., tekhnicheskii re-
daktor.

[Airplanes, gliders, autogiros, helicopters] Samolet, planer,
avtozhir, gelikopter. Moskva, Redizdat TsS Soiuza osvaviakhim
SSSR, 1948. 192 p. [Microfilm] (MIRA 8:1)
(Airplanes) (Gliders (Aeronautics)) (Autogiros) (Heli-
copters)

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 716 - I

BOOK Call No.: AF212565

Author: MIKIRTUMOV, E. B.

Full Title: LONGITUDINAL STATIC STABILITY OF HIGH-SPEED AIRCRAFT

Transliterated Title: Prodol'naya staticheskaya ustoychivost' skorostnogo samoleta

PUBLISHING DATA

Originating Agency: None

Publishing House: VVIA (Military Aviation Engineering Academy Im. Prof. N. Ye. Zhukovskiy)

Date: 1949 No. pp.: 107 No. of copies: Not given

Editorial Staff

Editor-in-Chief: Klimenko, L. V., Eng.-Col., Dotsent, Kand. of Tech. Sci.

PURPOSE: The purpose of this book is to systematize problems of aircraft stability at sonic and near sonic speeds and to arrange these problems in conformity with the level of students starting the course of aircraft stability.

TEXT DATA

Coverage: The author considers problems of the longitudinal static stability of aircraft in rectilinear flight. Attention is paid only to the composition of the physical and qualitative aspects

Prodol'naya staticheskaya ustoyichivost'
skorostnogo samoleta

AID 716 - I

of the problems considered. This is indispensable for further comprehension of stability calculation. However, the technique of calculation of the longitudinal stability of aircraft at the time of the publication of this book has reached such proportions that it is impossible to do without very complicated computations and empirical formulae. The combination of these materials in one book was difficult. Therefore, the physical fundamentals of longitudinal stability were published in a separate book. In particular the author considers the following subjects: elementary analysis longitudinal static stability, longitudinal static stability of aircraft in flight, and stability and aircraft control. A number of names of Russian scientists and scientific institutions are mentioned in the second part of the first chapter. Diagrams, graphs.

No. of References: 6 Russian, 1938-1948.

Facilities: VVIA (Military Aviation Engineering Academy im. Prof. N. Ye. Zhukovskiy).

2/2

MIKIRTUMOV, E. B.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 573 - I

BOOK Call No.: AF 342328

Author: KOSTENKO, I. K. and MIKIRTUMOV, E. B., Editors

Full Title: RECORD AIRCRAFT MODELS

Transliterated Title: Rekordnyye letayushchiye modeli

PUBLISHING DATA

Originating Agency: None

Publishing House: State Publishing House of the Defense Industry (Oborongiz)

Date: 1950 No. pp.: 242 No. of copies: 11,000

Editorial Staff: None

PURPOSE: A textbook and handbook for aviation modelers and for instructors of aviation modeling centers.

TEXT DATA

Coverage: This book contains descriptions of Soviet flying models, which broke many national and international records and therefore represent the best Soviet achievement in this field. The book contains working drawings and specifications for the construction of several flying models. In the appendix several tables give geometrical characteristics of several recommended airfoils. Diagrams, graphs, photos, tables.

No. of References: 59 Russian, 1877-1949

Facilities: None

MIKINTUROV, E. (DOCENT)

Oct 52

USSR/Engineering - Aer nautics, Speed

"Speed Qualities of Modern Airplanes," Docent E. Mikinturov, Engr-Col, Cand Tech Sci;
Docent N. Lysenko, Engr-Lt Col, Cand Tech Sci

Vest Vozhush Flota, No 1, pp 43-53

Discusses laws of changes in max speed along trajectory and in maximum vertical speed of air lanes with turbojet engines, using Zhukovskiy's drag-vs-speed curve. Analyzes effect of flight altitude on speed qualities.

262T20

MIKIRTUMOV, E., ^[B] inshener-polkovnik, dotsent, kandidat tekhnicheskikh nauk.

Forces acting on the pilot in curvilinear flight. Vest.Vozd.Fl.
34 no.11:76-82 N '51. (MLRA 8:3)
(Flight--Physiological aspects)

MIKIRTUMOV, E., dotsent, kandidat tekhnicheskikh nauk; LYSENKO, H.,
kandidat tekhnicheskikh nauk

Principles of the theory of flight. Kryl.rod. 3 no.2:17-18
F '52. (MLRA 8:8)

(Flight)

VASIL'YEV, G.S.; MIKIRTUMOV, E.B., kandidat tekhnicheskikh nauk, redaktor;
LATYBIN, Ye.V., redaktor; ZUDAKIN, I.M., tekhnicheskii redaktor.

[Principles of flight applied to airplane models with flapping wings] Osnovy poleta modelei s mashushchimi kryl'iami. Pod red. E.B.Mikirtumova. Moskva, Gos. izd-vo oboronnoi promyshl., 1953. 123 p. [Microfilm] (MLRA 7:10)
(Airplanes--Models) (Flight)