SIVINTSEV, Yu.V.

Gas-cooled high-temperature reactor for ships (from "Nucl. Engng.," vol. 7, no.68, 1962). Atom. energ. 13 no.1:86-88 Jl '62. (MIRA 15:7)

(Nuclear reactors) (Atomic ships)

SIVINTSEV, Yu.V.

More accurate data on the penetration of Cs^{137} into the biosphere. (MIRA 15:7)
Atom. energ. 13 no.1:83-89 Jl '62.
(Cesium—Isotopes) (Radioactive fallout)

SIVINTSEV, Yu.V.

Gamma-ray spectrum of short-living U^{235} fission fragments. Atom. energ. 13 no.4:397-398 O '62. (MIRA 15:9)
(Uranium--Isotopes) (Gamma rays--Spectra)
(Nuclear fission)

SIVINTSEV, Yu.V.

American apparatus for seawater radioactivity measurements.
Atom. energ. 13 no.4:398-399 O '62. (MIRA 15:9)
(United States—Radioactivation analysis)

SIVINTSEV, Yu.V.

Czech Conference on Radiation Safety. Atom. energ. 14 no.6: 598-600 Je '63. (MIRA 16:7)
(Czechoslovakia—Radiation—Safety measures)

L 17585-63 EWT(l)/EPF(n)-2/EWT(m)/BDS/ES(j) AMD/AEETC/ASD/SSD Pu-4 AR/K/DM
ACCESSION NR: AP3005224 S/0089/63/015/002/0152/0155

67

AUTHORS: Kovalenko, V. K.; Kozlov, V. F.; Sivintsev, Yu. V.; Smirnov, Yu. I.

TITLE: Irradiation doses of the personnel of the nuclear power installation aboard the nuclear icebreaker "Lenin" 14

SOURCE: Atomnaya energiya, v. 15, no. 2, 1963, 152-155

TOPIC TAGS: irradiation dosimetry, icebreaker "Lenin", Beta particle , thermal neutron , fast neutron

ABSTRACT: Methods are described for individual dosimetry. The irradiation doses of the personnel aboard the "Lenin" icebreaker received after three years of service at the nuclear reactor are given. The average dose was 1.62 biological rad. equivalent per year, which is more than three times less than permissible. It has been found that the contribution of thermal neutrons to the total dose was small (average value 8%; maximum 18%). The irradiation by Beta particles and fast neutrons is negligibly small. The general health of the nuclear personnel was comparable with that of the rest of the crew. Orig. art. has: 1 figure, 1 formula.

Card 1/2

.VINT.V., Yu.V.

Symposium on determining the content of radioactive substances in the human body. Atom. energ. 17 no.5:415-417 N '64.

Spectrometer for human emanations designed in Poland. Ibid.:417-419 (MIRA 17:12)

L 17617-65 EWT(m)/EWG(j) SSD/AFWL/AMD
ACCESSION NR: AP4049545 S/0089/64/017/005/0417/0419

(P)

AUTHOR: Sivintsev, Yu. V.

TITLE: Polish radiation spectrometer for humans

SOURCE: Atomnaya energiya, v. 17, no. 5, 1964, 417-419

TOPIC TAGS: radiation monitor, human vulnerability, radiological contamination, radiation spectrometer

ABSTRACT: This is a summary of an article by Pszona, B. Adamska, and K. Zarnowieck, entitled "Whole body counter for internal contamination control" (Warsaw, Institute of Nuclear Research, report no. 467/XIX, 1963). It describes the development, calibration, and first utilization of a radiation spectrometer for human use, used for monitoring the internal dose absorbed by personnel exposed to nuclear radiations. The spectrometer consists of a steel and lead shielding chamber, two scintillation counters, and a pulse-height

Card 1/4

L 17617-65
ACCESSION NR: AP4049545

analyzer. During the measurements the patient is seated on an inclined chair, as shown in Fig. 1 of the enclosure. The various components of the apparatus are described. The sensitivity to various radioactive isotopes is listed in Table 1 of the enclosure. The calibration of the equipment is described. Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 02

SUB CODE: NP, LS NR REF SOV: 000 OTHER: 001

Card 2/4

L 17617-65

ACCESSION NR: AP4049545

ENCLOSURE: 01

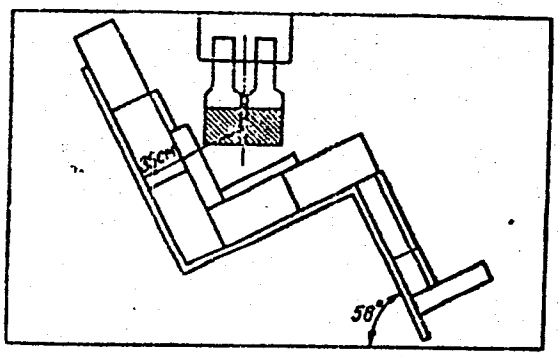

Fig. 1. Geometry of measurements with the Polish human radiation spectrometer

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L 17617-65
ACCESSION NR: AP4049545

ENCLOSURE: 02

Table 1. Sensitivity of Polish human radiation spectrometer

Isotope	Energy, MeV	Sensit. mCi
Au^{198}	0,41	3
Ir^{192}	0,47	6
Cs^{137}	0,66	3
Mn^{54}	0,88	4
Fe^{59}	1,1	8
Zn^{65}	1,12	9
Co^{60}	1,17	4
Ra^{226}*	1,76	20
Na^{24}	2,75	8

* 30% Ra^{226} in equilibrium with daughter decay products.

Card 4/4

SIVINTSEV, Yu.V.; ARUTINOV, O.V.; KANAREYKIN, V.A.

Correlation between K^{40} content in the organism of man and its constitution. Radiobiologiia 5 no.5:763-765 '65.
(MIRA 18:11)

1. Institut atomnoy energii imeni I.V.Kurchatova, Moskva.

SIVINTSEV, Yu.V.; ARUTINOV, O.M.; KANAREYKIN, V.A.

Determining natural radioactivity of the human organism. Med. rad. 10 no.11:66-71 N '65. (MIRA 19:1)

1. Submitted May 11, 1964.

L 42116-65 EWA(h)/EWT(m) DM

ACCESSION NR: AP5005805 S/0089/65/018/002/0141/0147

AUTHOR: Sivintsev, Yu. V.; Arutinov, O. M.; Kanareykin, V. A.; Panov, M. A.

TITLE: Spectrometer for human radiation

SOURCE: Atomnaya energiya, v. 18, no. 2, 1965, 141-147

TOPIC TAGS: biological contamination, biological agent detection, radioactive fallout, radiation measurement

ABSTRACT: The article describes a spectrometer for whole-body counting constructed at the Institut atomnoy energii im. I. V. Kurchatova (Institute of Atomic Energy) in 1961. The patient and four spectrometer pickups are placed inside a steel chamber (2 x 2 x 2 m inside dimensions). Each pickup contains an NaI(Tl) crystal scintillation counter, a photomultiplier, and the associated electronic equipment. The pulses from the four pickups are amplified and fed to a 128-channel pulse-height analyzer. The output of the analyzer shows the spectrum of the radiation from the human patient, with the peaks corresponding to radioactive K^{40} and Cs^{137}. Work on improvement of the parameters of the apparatus is described. The background counting rate has been reduced to 7800 counts/hr per kg of scintillator in the 150--2100

Card 1/2

L 42116-65
ACCESSION NR: AP5005805

keV energy range. Calibration carried out with aqueous solutions of K^{40} and Cs^{137} in a dummy have shown that the spectrometer sensitivity is 1.4×10^{-11} Curie/kg of γ-emitting isotope in the human organism. The tests have shown that the average potassium content in the human organism is 1.96 ± 0.08 g/kg of body weight for men and 1.53 ± 0.04 g/kg for women. The specific activity of Cs^{137} in the organism of a person not engaged in nuclear work was shown to increase from 35 to 135 picocurie from September 1962 to August 1963 as a result of contamination of the biosphere by nuclear fallout. "The authors thank Academician A. P. Aleksandrov for suggesting the problem and continuous interest in this research." Orig. art. has: 5 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 24Jun64 ENCL: 00 SUB CODE: LS, OP

NR REF SOV: 001 OTHER: 002

CC

Card 2/2

SIVINTSEV, Yu.V.

German-made spectrometer for measuring human radiation. Atom. energ. 19 no.5:488-489 N '65. (MIRA 18:12)

ACCESSION NR: AP4013297 S/0135/64/000/002/0041/0041

AUTHOR: Dorofeyev, V. M. (Professor); Murkin, L. P. (Engineer); Shadov, V. P. (Engineer); Sivirkin, V. F. (Engineer); Marty*nov, V. I. (Engineer)

TITLE: Gas-arc welding torch with vortex stabilization of the arc

SOURCE: Svarochnoye proizvodstvo, no. 2, 1964, 41

TOPIC TAGS: welding, welding torch, gas-arc welding torch, arc stabilization, vortex arc stabilization

ABSTRACT: The article describes the GEG-1A gas-arc welding torch with vortex arc stabilization, developed and produced at the Kuyby*shevskiy aviatsionny*y institut (Kuyby*shev Aviation Institute). The anode is in the form of a copper nozzle with an output diameter of 3.5 mm and a sliding seating arrangement in a tin housing. The cathode used is a tungsten rod 7 mm in diameter set in a fixed position with respect to the nozzle. The electrode assembly is cooled by water fed into the tin electrode holder. The nozzle and electrode assemblies are insulated from each other by a textolite casing with screwed-in nipple for argon feed. The argon is fed into the chamber through two tangential apertures. The introduction into the torch of vortical argon feed eliminated nozzle wear. All three major torch assemblies (nozzle unit, housing electrode unit) are threaded

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ACCESSION NR: AP4013297

together and sealed with layers of conventional technical rubber. Electric current is supplied from a single PS-500 welding converter. A particular feature of the argon supply system is the presence in it of a jet 1.19 mm in diameter; during operation of the torch, a supercritical pressure gradient is set up on this jet, providing for constant argon consumption for the established pressure and variable torch operation modes. The technical specifications of this torch are listed. Orig. art. has: 2 figures.

ASSOCIATION: Kuyby*shevskiy Aviatsionny*y Institut (Kuyby*shev Aviation Institute)

SUBMITTED: 00	DATE ACQ: 26Feb64	ENCL: 00
SUB CODE: ML, SD	NO REF SOV: 000	OTHER: 000

Card 2/2

ACC NR: AR6034725 SOURCE CODE: UR/0124/66/000/008/B052/B053

AUTHOR: Sivirkin, V. F.

TITLE: Theoretical and experimental investigation of a high temperature argon jet

SOURCE: Ref. zh. Mekhanika, Abs. 8B372

REF SOURCE: Tr. Kuybyshevsk. aviats. in-t, vyp. 22, 1965, 107-116

TOPIC TAGS: argon, high temperature research, argon jet, argon stream

ABSTRACT: The initial part of a turbulent subsonic high temperature stream in a flooded space is investigated. The velocity and enthalpy profiles at the nozzle section are assumed to be constant. It is assumed that the formation of the boundary layer starts at the rim of the nozzle and both the inner and outer boundaries of the mixing zone are rectilinear. Radiation and magnetohydrodynamic effects are not considered. In these suppositions, velocity distribution, density rho, and enthalpy J in the mixing zone, and also the position of its inner and outer boundaries have been found in theory for cases of plane-parallel and axisymmetric streams. The entire temperature range is divided into two sectors, in each of

Card 1/2

ACC NR: AR6034725

which the equation of state in the form rho = alpha/J beta with their constants alpha and beta is used. Diagrams of a gas electric burner and the results of experimental research of an argon jet at 9500K are presented. It is shown that these results agree well with the theoretical ones up to 8000K. The bibliography has 10 references. A. L. Stasenko. [Translation of abstract] [GC]

SUB CODE: 11/

Card 2/2

ACC NR: AR6034726 SOURCE CODE: UR/0124/66/000/008/B053/B053

AUTHOR: Sivirkin, V. F.

TITLE: Theory of the initial section of a subsonic, submerged, high-temperature stream

SOURCE: Ref. zh. Mekhanika, Abs. 8B373

REF SOURCE: Tr. Kubyshevsk. aviats. in-t, vyp. 22, 1965, 117-121

TOPIC TAGS: turbulent jet, state equation, enthalpy, gas dynamics, subsonic stream, high temperature stream

ABSTRACT: Approximation equations are presented for calculating the initial section of a plane turbulent high-temperature jet stream. A unique difference between the equations presented and the existing equations of G. N. Abramovich lies in the fact that the power function $\rho=\alpha I^{-\beta}$ is used as the equation of state. Here ρ and I are the density and full enthalpy of gas, and α and β are the constants, depending on the range of temperature change and the type of gas. A. S. Ginevskiy. [Translation of abstract]
SUB CODE: 20, 12/

Card 1/1 fm

UDC 11239-67

SIVITSKAYA, O.K.

Colorimetric determination of cymarin in standardized tablets and in adoniside. Apt.delo 8 no.4:68-71 Jl-Ag '59. (MIRA 12:10)

1. Iz laboratorii farmatsevticheskogo analiza (rukovoditel'-kand.khim.nauk N.S.Goryainova) TSentral'nogo aptechnogo nauchno-issledovatel'skogo instituta Ministerstva zdravookhraneniya SSSR.
(CYMARIN) (CARDIAC GLYCOSIDES)

YEREMEYEVA, V.S.; POROYKOVA, L.N.; PETROVA, R.I.; MORUNOVA, Z.S.; SIVITSKAYA, O.K.

Use of an internal indicator in the nitritometric titration of drugs. Apt. delo 9 no.3:60-63 My-Je '60. (MIRA 14:3)
(DRUGS) (COLORIMETRY)
(INDICATORS AND TEST-PAPERS)

SIVITSKAYA, O.K.

Colorimetric determination of a tincture of strophanthin. Apt. delo 10 no. 2:50-54 Mr-Ap '61. (MIRA 14:4)
(STROPHANTHIN) (COLORIMETRY)

SIVITSKAYA, O.K.

Colorimetric determination of total glycosides in Convallaria tincture. Apt.delo 12 no.3:38-41 My-Je '62. (MIRA 16:1)

1. TSentral'nyy aptechnyy nauchno-issledovatel'skiy institut.
(GLYCOSIDES) (LILLIES-OF-THE-VALLEY) (COLORIMETRY)

SIVITSKAYA, O.K.

Colorimetric determination of cymarin in a 1:2 liquid concentrate of adonis in 25% alcohol. Sbor. nauch. trud. TSANII 4:123-129 '63 (MIRA 17:3)

1. Laboratoriya farmatsevticheskogo analiza (rukovoditel' laboratorii - kand. farm nauk V.A. Zaytsev) TSentral'nogo aptechnogo nauchno-issledovatel'skogo instituta.

SIVITSKAYA, O.K.

Use of the calorimetric method for the determination of the activity of lantoside. Sbor. nauch. trud. TSANII 6:110-114 '64. (MIRA 19:1)

1. Laboratoriya farmatsevticheskogo analiza (rukovoditel' - kand. farm. nauk M.I. Kuleshova) TSentral'nogo aptechnogo nauchno-issledovatel'skogo instituta.

KAZINITSKIY, Mikhail Il'ich, inzh.; PLOTKIN, Naum Borisovich, inzh.; TOLCHINSKIY, Aleksandr Aleksandrovich, inzh.; CHAPLITSKIY, Vladimir Konstantinovich, inzh.; NASEDKIN, V.M., inzh., retsenzent; SIVITSKIY, K.P., inzh., retsenzent; KOTOVICH, B.M., dotsent, retsenzent; VOLCHANSKIY, R.A., kand.tekhn.nauk, nauchnyy red.; DENISOV, A.A., dotsent, nauchnyy red.; BILINSKIY, M.Ya., red.; RAKOV, S.I., tekhn.red.

[Handbook for collective farm construction foremen] Spravochnik kolkhoznogo desiatnika-stroitelia. Moskva, Vses.uchebno-pedagog. izd-vo Trudrezervizdat, 1959. 564 p. (MIRA 13:5)
(Building)

SIVITSKIY, Konstantin Pavlovich; PROFERANSOV, D.P., nauchnyy red.; GIUNTER, A.R., red. izd-va; GOL'BERG, T.M., tekhn. red.

[Builders in the struggle for creating the material and technical bases of communism]Stroiteli v bor'be za sozdanie material'no-tekhnicheskoi bazy kommunizma. Moskva, Gosstroiizdat, 1962. 33 p. (MIRA 15:10)
(Construction industry)

PUTYAKOV, Konstantin Petrovich, kand. tekhn. nauk; POLONSKIY, Lev Davydovich, inzh.; PATRIN, Nikolay Ivanovich, inzh.; VEDENEYEV, Vasiliy Alekseyevich, inzh.; ZHEBROVSKIY, Aleksandr Stepanovich, inzh.; SHIROKOVA, G.M., red.; SIVITSKIY, K.P., nauchn. red.; SHEVCHENKO,T.N., tekhn.red.

[Industrial construction of sugar] Industrial'noe stroitel'stvo sakharnykh zavodov. Moskva, Gosstroiizdat, 1963. 163 p. (MIRA 17:2)

KAZANSKIY, Nikolay Vasil'yevich; SIVITSKIY, Konstantin Pavlovich; IVANOV, V.P., red.

[Plastering] Shtukaturnye raboty. Moskva, Izd-vo M-va kommun.khoz. RSFSR, 1963. 23 p. (MIRA 17:4)

KAZANSKIY, Nikolay Vasil'yevich; SIVITSKIY, Konstantin Pavlovich; KUZ'MIN, P.V., red.

[Woodworking operations; carpentry and joinery] Derevoobdelochnye raboty; plotnichnye i stoliarnye. Moskva, Izd-vo lit-ry po stroit. "Stroiizdat," 1964. 49 p. (MIRA 17:5)

TIMOF'EYEVICH, Vladimir Semenovich. Prinimal uchastiye SIVITSKIY, Ye.S. SOKOLOVA, A.D., nauchnyy red.; PODOBED, E.G., red.; PERSON, M.N., tekhn.red.

[Assembling steel structures] Montazh stal'nykh konstruktsii. Izd.3., ispr. i dop. Moskva, Vses.uchebno-pedagog.izd-vo Proftekh.izdat, 1960. 367 p. (MIRA 13:9)
(Building, Iron and steel)

SOKOLOVA, Anna Dmitriyevna, kand. tekhn. nauk; KOKOBOV, Viktor Mikhaylovich, inzh.; KHODOV, Mikhail Petrovich, inzh.; Prinimal uchastiye SIVITSKIY, Ye.S., inzh.

[Lifting, conveying, and tackling equipment for assembling structural elements] Pod"emno-transportnoe i takelazhnoe oborudovanie dlia montazha stroitel'nykh konstruktsii. 3. izd., perer. Moskva, Stroiizdat, 1964. 326 p. (MIRA 18:3)

KHRISTOFOROV, I.; [illegible]

Hemagglutination reaction in poultry tuberculosis. Izv Vet inst zaraz parazit 9:137-[illegible] '63)

SIVKO, A.

Built of large silicate blocks. Stroitel' 2 no.3:8 Mr '56.
(Building blocks) (Garages) (MLRA 9:12)

SIVKO, T. N.

USSR/Biology - Microbiology, Sanitation

Mar/Apr 52

"Some Observations on the 'Green Bacteria,'" G. G. Vinberg, T. N. Sivko, Belorussian Sanitary Inst, Minsk

"Mikrobiol" Vol XXI, No 2, pp 139-145

Describe the properties of the chlorophyll-contg "green bacterium" (for which the name Bacterium chlorophyllophorum is suggested) and the role which it plays in purification of liquid effluents from sewage at the city of Minsk.

210T9

Sivko, T. V.

Determination of the chlorophyll content in the plankton. G. G. Vinberg and T. N. Sivko. *Izvest. Akad. Nauk Belorussk. S.S.R.* 1953, No. 3, 61-74.—The method of Harvey (cf. *C.A.* 28, 4490[1]) which is universally used to det. chlorophyll (I) in marine phytoplankton, is highly inaccurate. In a series of expts. the following method was developed which gives reproducible results for samples contg. 10 γ I and above. Suspend 3 g. of a well-powd. Jena glass in a conical container with 300 ml. water, after 5-min. standing decant the upper layer, pour 50 ml. of the decanted suspension over a membrane filter in a Büchner funnel to cover the filter with the glass powder, and then use the filter so treated for the filtration of the exptl. water (collecting of phytoplankton). Air dry the filter and the retained plankton, sep. the membrane filter from the glass layer and the plankton and transfer quantitatively into a centrifuge tube, mix with 3 ml. MeOH, and immerse the mixt. several times into boiling water for 1 min. to facilitate the extn. of I from the plankton; repeat the extn. 3 times, combine the supernatants, make to 10 ml. with MeOH, and then measure the concn. of I photocolorimetrically, a Pulfrich photocolorimeter, filter No. S 66.6 being used. Use a standard curve of a pure prepn. of I to calc. the I concn. in the exptl. samples. The covering of the membrane filters with the glass layer secures the retaining of all particles of plankton of the exptl. waters; the dried plankton prepn. (with glass powder) can be stored in darkness for 1 month without losing its I content. The plankton prepn. being stored has to be wet before MeOH extn. 34 references.

E. Wierbicki

SIVKO, T. N.

U S S R .

Effect of industrial drainage from paper mills in Belorussian S.S.R. on open water reservoirs. N. F. Glushakova and T. N. Sivko. *Izvest. Akad. Nauk Belorus. S.S.R.* 1953, [illegible]. *Referat. Zhur., Khim.* 1954, No. 20039.—The effectiveness of water purification installations and the effect of the waste water of paper mills operating on imported pulp were studied. A flotation trap removed 64%, a drum filter with No. 70 screen removed 68%, and a filter of the millboard machine-type removed 25% of suspended matter. None of the devices removed kaolin. Discharge of waste water from the traps into open water reservoirs caused only an insignificant change in the oxidizability and the B.O.D. of the water, concn. of dissolved O, and a noticeable increase in the content of suspended matter. A const. pollution of the river was observed only in the cases where the waste water was dild. by the river water not more than 30-fold. Additn. purification of waste water in settling tanks beyond the traps with a 4-hour stay in the settling tanks is recommended. M. Hosch

VINBERG, G.G.; SIVKO, T.N.

Phytoplankton as the agent of self-purification of polluted waters. Trudy Gidrobiol.ob-va 7:3-23 '56. (MLRA 10:2)

1. Nauchno-issledovatel'skiy sanitarnyy institut Ministerstva zdravookhraneniya BSSR, Minsk.
(Algae) (Water--Purification)

USSR / General Biology - General Hydrobiology. B

Abs Jour: Ref Zhur-Biol., No 9, 1958, 38105.

Author : Petrovich, P. G., Sivko, T. N., Sergeev, A. I.
Inst : Not given.
Title : Hydrochemical and Hydrobiological Characteristics of the Ptich River and Its Bottomland Basins.

Orig Pub: Uch. zap. Belorussk. un-t, 1957, No 33, 185-210.

Abstract: A study was conducted of the chemical composition of the water, and the qualitative and quantitative zooplankton and zoobenthos composition on a section of midriver flow of the Ptich River (a tributary of the Pripyat River) and its bottomland basins. The effect of humus substances, which abound in its lower reaches, is reflected in zooplankton development. In the bottomland basins,

Card 1/2

VINBERG, G.G.; SIVKO, T.N.

Photosynthesis of phytoplankton in biological treatment ponds of Minsk filter fields. Dokl.AN BSSR 4 no. 11:490-493 N '60. (MIRA 13:12)

1. Belorusskiy nauchno-issledovatel'skiy sanitarno-gigiyenicheskiy institut. Predstavleno akademikom AN BSSR T.N. Godnevym.
(Minsk--Sewage disposal) (Phytoplankton)
(Photosynthesis)

SIVKO, T.N.

The dichromate method of determining the oxidizability of pure and polluted waters. Gidrokhim. mat. 30:190-197 '60. (MIRA 13:9)

1. Belorusskiy sanitarnyy institut, Minsk.
(Water--Analysis) (Organic matter) (Potassium dichromate)

SIVKO, T. N.

Cand Biol Sci - (diss) "Significance of photosynthesis of plankton for self-purification of contaminated waters." Minsk, 1961. 19 pp; (Belorussian State Univ imeni V. I. Lenin); 220 copies; price not given; list of author's works on pp 18-19 (13 entries); (KL, 6-61 sup, 209)

SIVKO, [illegible]

[illegible] growth of plankton algae during self-purification of sewage in sewage lagoons. Mikrobiologiia 33 no.4:699-704 Jl-Ag '64.
(MIRA 18:3)

1. Belorusskiy nauchno-issledovatel'skiy sanitarno-gigiyenicheskiy institut, Minsk.

KRINITSKIY , L.M., dotsent; SIVKO, V.I., inzh.

Distance between blind shafts in mining a flat seam as a hard heading. Izv. vys. ucheb. zav.; gor. zhur. 6 no.7:19-22 '63. (MIRA 16:9)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy institut imeni Artema. Rekomendovana kafedroy provedeniya i krepleniya gornykh vyrabotok Dnepropetrovskogo gornogo instituta.
(Coal mines and mining)

SIVKO, V.I., inzh.; SAVOST'YANOV, A.V., kand. tekhn. nauk

Effect of the rubble belt on the state of a hard heading. Ugol' Ukr. 7 no.7:15-16 Jl '63. (MIRA 16:8)

1. Dnepropetrovskiy gornyy institut.
(Mine filling)

SIVKO, V.I.; SAVOST'YANOV, A.V.; MOISEYEV, M.A.

Effect of bearing pressure on the condition of lateral drifts. (MIRA 18:4)
Ugol' 40 no.3:23-26 Mr '65.

1. Dnepropetrovskiy gornyy institut (for Sivko, Savost'yanov).
2. Trest Irmakhanskugol' (for Moiseyev).

SEVASTYANOV, A.V., kand. tekhn. nauk; IVKC, V.I., inzh.

Effect of the depth of workings on stress distribution in the underlying rock of a seam being mined. Izv. vys. ucheb. zav.; gor. zhur. 8 no.7:43-47 '65. (MIRA 18:9)

1. Dnepropetrovskiy ordena Trudovogo Krasnogo Znameni gornyy institut imeni Artema. Rekomendovana kafedroy podzemnoy razrabotki poleznykh iskopayemykh.

SIVKOV, A.

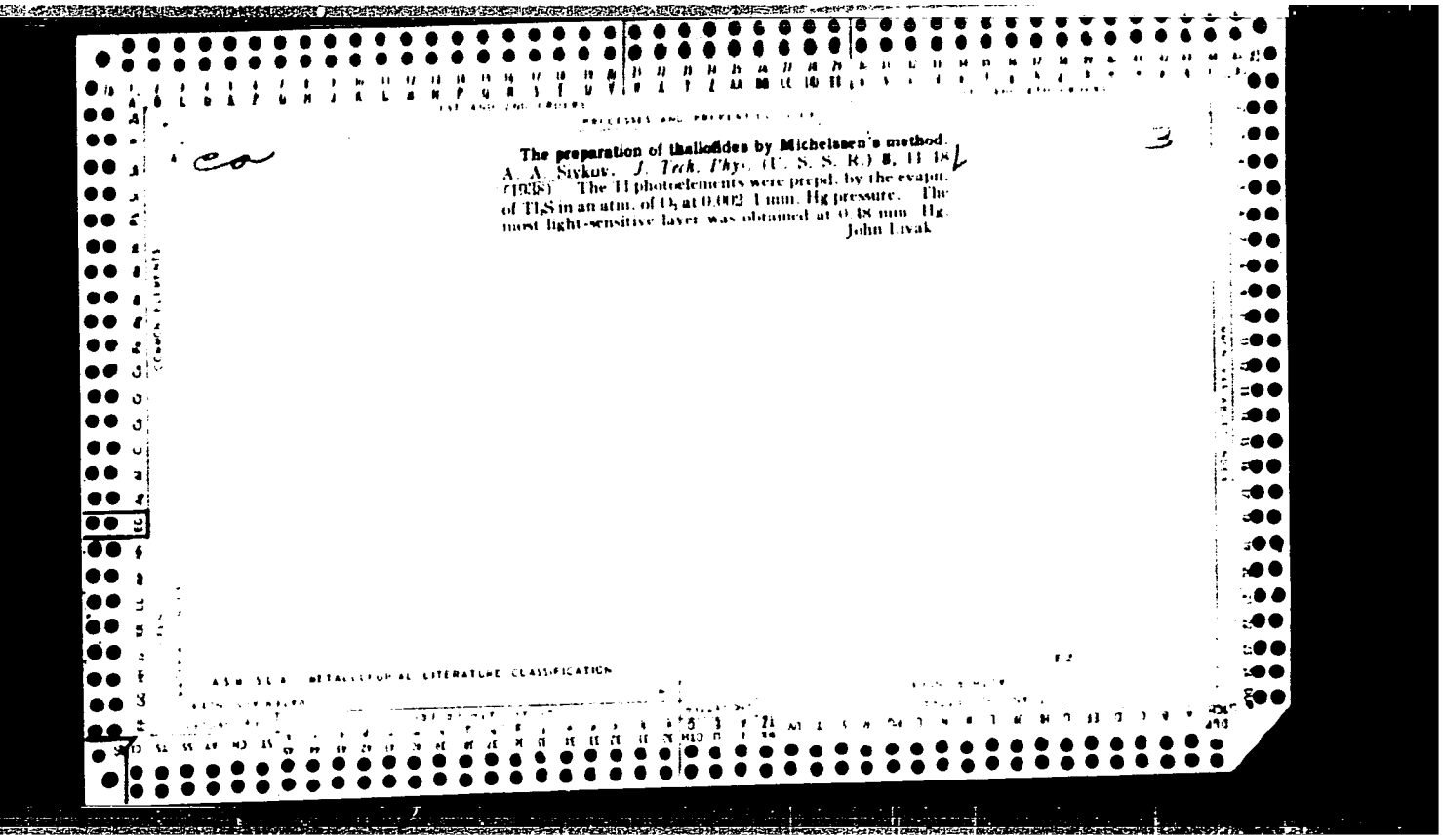
"Significance of Artillery on a Submarine," Morskoy Sbornik, Official Navy Journal of the Soviet Fleet, n. 4, Apr 1931, p. 70-77.

SIVKOV, A. A.

VEYNGEROV, M.L.; SIVKOV, A.A.; BARYSHNIKOVA, A.S.

Single-beam two-channel optico-acoustical gas analyzer. Opt. i spektr. 1 no.8:1024 D '56. (MLRA 10:2)

1. Leningradskiy institut tochnoy mekhaniki i optika.
(Infrared rays) (Gases--Spectra)



The preparation of thallofides by Michelsen's method. A. A. Sivkov. *J. Tech. Phys.* (U. S. S. R.) **8**, 11 18 (1938). The Tl photoelements were prepd. by the evapn. of Tl_2S in an atm. of O_2 at 0.002 1 mm. Hg pressure. The most light-sensitive layer was obtained at 0.18 mm. Hg.

John Livak

SIMOV, V. A.

SIMOV, V. A. "[illegible] for [illegible] the [illegible] of the first order [illegible] example of the disturbance of the asteroid (13) Egeria by Jupiter", Uchen. zapiski (Tomskiy gos. un-t i. Kuybysheva), No. 11, 1948, p. 125-36.

So: U-3761, 10 April 53, (Letopis 'Zhurnal 'nykh Statey, No. 12, 1949).

SIVKOV, A. A.

Sivkov, A. A. "Improvements in the orbit of a minor planet (776)," Trudy Sib. fiz.-tekhn. in-ta, issue 26, 1943, p. 172-74

SO: U5241, 17 December 1953, (Letopis 'Zhurnal 'nykh Statey, No. 26, 1949)

SIVKOV, A. A.

Occultations

Observations of lunar occultations of stars at the Tomsk Observatory.
Astron. tsir. no. 128, 1952

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

SIVKOV, A.A.

Observations of lunar occultations of stars made at Tomsk University Observatory in 1953. Astron.tsir. no.145:17 Ja '54. (MLRA 7:6)

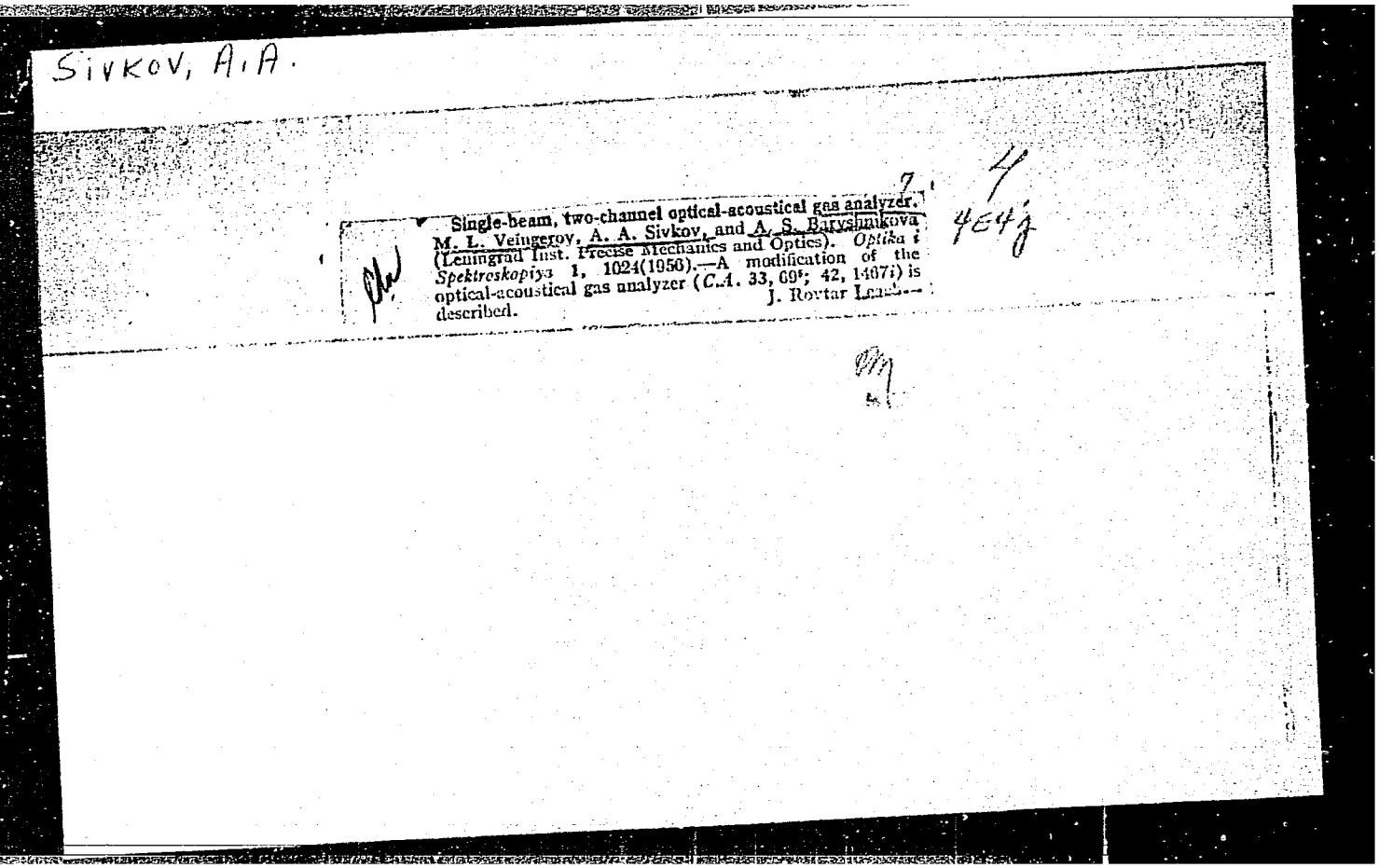
1. Astronomicheskaya observatoriya Universiteta (Tomsk).
(Occultations)

SIVKOV, A.A.

Observations of lunar occultations of stars at Tomsk Observatory in January 1954. Astron.tsir. no.147:18 Mr '54. (MLRA 7:8)
(Occultations)

SIVKOV, A.A.

Observations of lunar occultations of stars at the Tomsk Observatory in March 1954. Astron.tsir. no.149:22-23 My '54. (MLRA 7:7)
(Occultations)



Sivkov, A. A.

Single-beam, two-channel optical-acoustical gas analyzer. M. L. Veingerov, A. A. Sivkov, and A. S. Baryshnikova (Leningrad Inst. Precise Mechanics and Optics). *Optika i Spektroskopiya* 1, 1024(1956).—A modification of the optical-acoustical gas analyzer (*C.A.* 33, 69⁶; 42, 1407i) is described. J. Rovtar

SIVKOV, A.A.

Lunar occultations of stars observed in Tomsk. Astron. tsirk. no.175: 24 D '56. (MLRA 10:5)
(Occultations)

SIVKOV A.A.

51-6-24/26

AUTHORS: Veyngerov, M. L., Sivkov, A. A., and Malykh, E. V.

TITLE: Analysis of Gases and Vapours based on the Negative Optico-acoustic Effect. (Analiz gazov i parov, osnovannyy na otritsatel'nom optiko-akusticheskom yavlenii.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.II, Nr.6, pp. 823-825. (USSR)

ABSTRACT: Action of the usual optico-acoustic gas analysers is based on the fact that radiation of the source after passing through the gas studied and then modulated at a certain frequency causes pressure pulsations in the optico-acoustic receiver due to periodic heating of the gas in the receiver. It is possible, however, to use the negative optico-acoustic effect (Ref.1), i.e. instead of a source of heat it is possible to use a refrigerator which is a body with a temperature much lower than the temperature of the gas in the receiver. The authors verified the possibility of use of this negative effect by filling an optico-acoustic receiver

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Analysis of Gases and Vapours Based on the Negative Optico-acoustic Effect.

with CO_2 gas. In front of the receiver they placed a container (C) filled with the gas under study. Behind this container a refrigerator was placed. Between the container C and the receiver a disc with apertures was rotated. The optico-acoustic receiver contained a microphone connected to an amplifier. The amplified signal was rectified and measured by a d.c. instrument. Radiation was modulated at 1100 c/s. When C was filled with air the signal was at its maximum. On introduction of CO_2 into C the signal decreased. It was found that using this method down to 0.4% of CO_2 in air could be detected. The calibration curve for this apparatus was similar to the calibration curves for the usual optico-acoustic gas analysers (Ref.2). Use of better component parts in this apparatus should make the sensitivity of the negative effect method of the order of the sensitivity of the usual (positive) optico-acoustic method. There are 2 references, both of which are Slavic.

Card 2/3

Sivkov, A.A.

51-4-20/26

AUTHORS: Veyngerov, M. L. and Sivkov, A. A.

TITLE: A Method of Study of Emission Spectra of Gases at Room Temperature. (Metod issledovaniya spektrov ispuskaniya gazov, nakhodyashchikhsya pri komnatnoy temperature.)

PERIODICAL: Optika i Spektroskopiya, 1957, Vol.III, Nr.4, pp.393-394. (USSR)

ABSTRACT: A negative optico-acoustical effect was discovered in 1950 (Ref.1) and applied to gas analysis (Ref.2). This effect was used to obtain infrared emission spectrum (in the 15μ region) of carbon dioxide. The apparatus included an infrared monochromator with a rock-salt prism. A mirror was placed at 45° to the beam at the monochromator exit. Below this mirror a Dewar vessel (refrigerator) with liquid air was placed. Between the mirror and the monochromator exit slit a disc with apertures was rotated (interruption rate of 430 c/s). In front of the entrance slit of the monochromator an optico-acoustical chamber filled with CO_2 was placed. This chamber contained a microphone. Depth of gas in the chamber was 10 mm. An alternating current from the microphone was

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A Method of Study of Emission Spectra of Gases at Room Temperature.

amplified and measured with a mirror galvanometer. The figure (p.394) shows the galvanometer deflection against wavelength for CO_2 at room temperature. The reasons for this effect are as follows. Carbon dioxide emits when an optical path is open between the chamber and the refrigerator, since the latter is at a much lower temperature. Due to this emission temperature in the chamber falls. Then rotation of the disc interrupts the optical path to the refrigerator and temperature rises again. This causes pressure pulsations recorded as a current by the galvanometer. Presence of carbon dioxide in air outside the chamber weakens the effect described here. The method may be extended to about 100 μ. There is 1 figure and 2 references, both of which are Slavic.

ASSOCIATION: Leningrad Institute of Precision Mechanics and Optics. (Leningradskiy institut tochnoy mekhaniki i optiki.)

A Method of Study of Emission Spectra of Gases at Room Temperature. 51-4-20/26

SUBMITTED: March 25, 1957.

AVAILABLE: Library of Congress.

Card 3/3

SIVKOV, A.A., kand.tekhn.nauk

Effect of temperature of carbon dioxide on its absorbing capacity measured by the optical and acoustic method. Izv.vys.ucheb.zav.; prib. no.3:103-109 '58. (MIRA 12:2)

1. Leningradskiy institut tochnoy mekhaniki i optiki.
(Carbon dioxide--Testing)

SOV/51-4-6-15/24

AUTHORS: Veyngerov, M.L., Nechayeva, L.M., Pankratov, N.A., and Sivkov, A.A.

TITLE: A New Method of Investigation of Emission Spectra of Bodies at Room Temperature (Novyy metod issledovaniya spektrov ispuskaniya tel, nakhodyashchikhsya pri komnatnoy temperature)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol IV, Nr 6, pp 797-799 (USSR)

ABSTRACT: A new differential method of investigation of emission spectra of bodies at room temperature is reported. This method is based on the use of two refrigerators, in the same way as in the analysis of gases by means of the negative optico-acoustic effect described in Ref 3. Principles of the method can be seen from Fig 1. In front of a monochromator slit 1 there is a plane mirror 2, a concave mirror 3 and a non-selective optico-acoustic receiver (see Ref 4). The signal produced by the receiver 4 is amplified by the amplifier 5 and after synchronous rectification by a detector 6 is measured by a mirror galvanometer 7. In front of the other monochromator slit a mirror modulator 8 and two vessels 9 and 10 filled with liquid air are placed. A generator for the synchronous detector is on the axle of a motor 11. Directly above each vessel filled with liquid air there is a cell which has sylvite windows. Plane mirrors are placed at an angle of 45° to the

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A New Method of Investigation of Emission Spectra of Bodies at Room Temperature

horizontal above each of these cells. The arrangement is shown in Fig 1 on the right-hand side. According to the position of the mirror modulator 8, radiational exchange between the receiver 4 and one or other of the liquid-air refrigerators will occur. The resulting signal produced by the receiver is equal to zero unless one of the cells is filled with the gas to be studied. In the latter case the resulting signal is proportional to emission of gas in the spectral region selected by the position of the monochromator prism. Using the apparatus described the authors obtained emission spectrum of methane at room temperature in the region near 8 μ. The results obtained are shown in Fig 2. The monochromator slit widths used were 2 mm which correspond to a spectral interval of 0.73 μ. The method described can be applied to liquids and solids, as well as to gases. The authors point out that Stepanov and Khvashchevskaya (Ref 7) described an apparatus consisting of a refrigerator, a monochromator, the substance studied and a receiver which was used to obtain curves from which by the usual methods the absorption or emission spectrum

A New Method of Investigation of Emission Spectra of Bodies at Room Temperature

could be obtained. There are 2 figures and 5 Soviet references.

ASSOCIATION: Gosudarstvennyy Opticheskiy Institut im. S.I. Vavilova (State Optical Institute imeni S.I. Vavilov)

SUBMITTED: November 27, 1957

SIVKOV, A.A.

Using the optical acoustic method for quantitative determination of carbon dioxide in gas mixture containing water vapors. Opt.-mekh. prom.. 25 no.4:53-56 Ap '58. (MIRA 11:10)
(Gases--Spectra) (Carbon dioxide)

24(4) SOV/51-6-5-31/34

AUTHORS: Veyngerov, M.L., Sivkov, A.A. and Petrov, A.P.

TITLE: Crookes' Radiometer as a Modulator of Radiation (Radiometr Kruksa v kachestve modulyatora izlucheniya)

PERIODICAL: Optika i Spektroskopiya, 1959, Vol 6, Nr 5, pp 713 (USSR)

ABSTRACT: Under some conditions it is not possible to use modulators of radiation which are rotated by an electric motor. The authors found that a modified Crookes' radiometer can be also used as a radiation modulator. The moving system of the radiometer consisted of four mica plates blackened on one side and aluminized on the other. These plates were suspended at 45° to the vertical. A radiation flux which caused the radiometer to rotate was directed horizontally on to the blackened sides of the plates. Radiation flux which was to be modulated was directed vertically on to the aluminized sides of the plates and was interrupted when these plates rotated. The rate of rotation of the radiometer depended on the vacuum and on the intensity of the horizontal radiation flux, which moved the plates. The highest rate of rotation was achieved at 2×10^{-2} mm Hg with the horizontal flux intensity of 0.5 W. The radiometer rotated then at 13 rev/sec, equivalent to a modulation frequency

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Crookes' Radiometer as a Modulator of Radiation

of 52 c/s. This frequency could be decreased continuously to zero. The maximum diameter of the cross-section of the modulated beam was 10 mm. Another variant of the Crookes' radiometer with two series of plates could also be used as the radiation modulator. In this case one series of plates was fixed vertically and was used for rotation of the radiometer, while the other was used to modulate the vertical radiation flux.

SUBMITTED: January 9, 1959

Card 2/2

VEYNGEROV, M.L.; SIVKOV, A.A.

Single-beam optico-acoustic gas analyzer. Opt. i spektr. 8 no.5: 735 My '60. (MIRA 13:9)

(Gases--Analysis)

S/051/61/011/006/012/012
E032/E514

AUTHORS: Veyngerov, M.L., Sivkov, A.A. and Pien Nang-hua

TITLE: A hot filament tube with a radiometric modulator

PERIODICAL: Optika i spektroskopiya, v.11, no.6, 1961, 780-781

TEXT: This is a continuation of work reported by the first two of the present authors and A. P. Petrov (Ref.1: Opt. i spektr., 6, 713, 1959). A description is given of a tube consisting of a hot filament and a set of moveable vanes immediately above it (Fig.1). The vanes are at 45° to the axis of rotation and are made of 0.05 mm aluminium foil with 0.03 mm mica plates attached to them. The filament is in the form of a cylindrical spiral and is made of tungsten wire. The tube is filled with nitrogen to a pressure of a few hundredths of mm Hg. Both sides of the vanes are coated with lamp black. Fig.2 shows the relation between the modulation frequency (left-hand scale) and the power input W (watts). The angular velocity is also indicated (rps). The curve tends to "saturate" as a result of frictional forces. The "saturation" may be made to appear at lower velocities by increasing gas pressure. There are 2 figures and 1 Soviet-bloc reference.

Card 1/2

SIVKOV, A.A.; CHEN' FYN-TSI [Ch'ên Fêng-ch'i]

Chamber the observation of the negative optical acoustic effect. Opt. i spektr. 13 no.4:609-610 O '62. (MIRA 16:3)
(Sound--Apparatus) (Optical instruments)

L 19960-63 EWT(1)/BDS--AFFTC/ASD

ACCESSION NR: AP3007287 S/0051/63/015/003/0434/0436

AUTHOR: Sivkov, A.A.; Aver'yanov, N.Ye.

TITLE: Optical-acoustical resonant chamber

SOURCE: Optika i spektroskopiya, v.15, no.3, 1963, 434-436

TOPIC TAGS: infrared absorption, optical cavity, acoustical spectroscopy

ABSTRACT: The authors built and tested an optical-acoustical resonant chamber intended for measuring infrared absorption of vapors. Unlike the usual small fixed volume cavities, the new chamber has a variable volume. It consists (see figure in Enclosure 01) of a metal cylinder 1, capped at one end by a window 2 transparent to infrared, a moveable piston 3, a microphone 4 mounted on the piston and a rod 5 for displacing the piston. In one series of experiments the working volume was filled with a mixture of air and gasoline vapor; in another series with pure air (in this case a smoked mica plate covered the window). In view of the fact that the available microphone had two selective response peaks - at 550 and 840 cps - the infrared beam was modulated at one or the other of these frequencies. The purpose of the experiments was to find the chamber length corresponding to

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L 19960-63

ACCESSION NR: AP3007287

resonance at the above frequencies. Curves for the pick-up signal versus chamber length are reproduced; these show a sharp peak for each of the modulation frequencies. Evaluations indicate that the present chamber is several times more sensitive than conventional optical-acoustical chambers. Some possible auxiliary uses of the chamber are suggested. Orig.art.has: 3 figures.

ASSOCIATION: none

SUBMITTED: 20Nov62 DATE ACQ: 090ct63 ENCL: 01

SUB CODE: PH NO REF SOV: 014 OTHER: 001

Card 2/2

L 44150-65 EWT(1)/EEC(m)/EEC(j)/EED-2/EWA(h) Pae-2/Peb/Pl-4 IJP(c) CC

ACCESSION NR: AP5011896 UR/0120/65/000/002/0190/0192

AUTHOR: Sivkov, A. A.; Panova, E. G.

22
21
B

TITLE: A tunable opticoacoustical resonator

SOURCE: Pribory i tekhnika eksperimenta, no. 2, 1965, 190-192

25

TOPIC TAGS: acoustical resonator, opticoacoustical resonator, IR acoustical resonator, acoustical analyzer, acoustical frequency analyzer, gas analyzer, acoustical gas analyzer

ABSTRACT: An opticoacoustical resonator with acoustically tunable cavities for amplifying the signal is described. The cylindrical chamber consists of two cavities separated by a thick wall perpendicular to the axis. The wall has an axial cylindrical neck connecting both cavities. Both ends of the chamber have threaded caps which can be moved axially to change the volume of each cavity. The input end cap has a window which is transparent to infrared radiation and a disk of coated mica which is heated by IR radiation pulsating with a certain frequency. A dynamic microphone is attached to the inside of the output cavity cap. The pulse frequency of the IR can be adjusted to the best response frequency of the microphone (700 cps in the case described). Resonance conditions of the system can be established by screwing the caps in or out, by proper selection of the length and diameter of the

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L 44150-65

ACCESSION NR: AP5011896

axial connecting neck, or by filling the chamber with an appropriate gas. In the case described, a resonance of 700 cps was established by adjusting the volumes of the cavities (10.88 cm^3 for the input and 5.0 cm^3 for the output cavity) at a ratio of the connecting hole cross section to its length equal to 0.162 cm. The resonance curve obtained had a rather sharp peak signal which dropped by half when the volume of the input cavity was changed by 2 cm^3, or that of the output cavity by 1 cm^3. Generally speaking, the signal from the tuned chamber exceeded that of an untuned chamber by about ten times. The width of the resonance curve was 60 cps, which corresponds to a time constant of 0.008 sec. Orig. art. has: 2 figures. [FP]

ASSOCIATION: Leningradskiy institut tochnoy mekhaniki i optiki (Leningrad Institute of Precision Mechanics and Optics)

SUBMITTED: 04Mar64 ENCL: 00 SUB CODE: EC

NO REF SOV: 006 OTHER: 002 ATD PRESS: 3248

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2

L 20775-65 AFWL/SSD/ASD(a)-5/BSD/AFMD(p)/AFETR/AFTC(b)/RAEM(d)/ESD(dp)

ACCESSION NR: AP5003791 S/0144/64/000/009/1066/1081

AUTHOR: Boguslavskiy, I. Z.; Goncharenko, R. B.; Dombrovskiy, V. V.; Kogan, V. V.; Sivkov, A. P.; Sibel'nikov, A. V.; Khutoretskiy, G. M.

TITLE: Use of electronic digital computer "Minsk-I" for practical design of electrical machines

SOURCE: IVUZ. Elektromekhanika, no. 9, 1964, 1066-1081

TOPIC TAGS: computer calculation, electric equipment digital computer/Minsk-1 computer

Abstract: The authors discuss the use of digital computers for the design of specialized machines which are produced in small numbers and which cannot be computed using standardized programs. The most difficult problems are encountered when designing machines utilizing new cooling systems and materials and machines operating at high specific loads. The article contains detailed discussion of five projects solved at the Laboratory for Numerical Calculation Devices of the Leningrad Affiliate of the All-Union Scientific-Research Institute of Electrical Machines during the 1962-1963 period: 1) the calculation of the starting characteristics of synchronous motors with large rotors; 2) the checked calculation of electrical circuitry of hydrogenerators; 3) the exact magnetic calculation of teeth

Orig. art. has: 7 figures, 19 formulas.

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L 20775-65
ACCESSION NR: AP5003791 O

of electric machines; 4) the calculation of transient processes in synchronous and asynchronous machines; and 5) the calculation of forced oscillations of turbogenerator rotors.

ASSOCIATION: none

SUBMITTED: 08May64 ENCL: 00 SUB CODE: DP, EE

NO REF SOV: 000 OTHER: 000 JPRS

Card 2/2

BRANOVSKIY, M.A., kand. tekhn. nauk; SIVKOV, A.P., inzh.

Elimination of the thermal unbalance of rotors with forced cooling of the windings. Elek.sta. 35 no.9:38-43 S '64.
(MIRA 18:1)

BOGUSLAVSKIY, Il'ya Zelikovich, aspirant; GONCHARENKO, Robert Borisovich, kand. tekhn. nauk, nauchnyy sotrudnik; DOMBROVSKIY, Vyacheslav Vyacheslavovich, kand. tekhn. nauk, starshiy nauchnyy sotrudnik; KOGAN, Valentina Veniaminovna, inzh.; SIVKOV, Arkadiy Petrovich; SIDEL'NIKOV, Aleksandr Viktorovich, aspirant; KHUTORETSKIY, Garri Mikhaylovich

Use of the "Minsk-1" digital computer in practical calculations of electrical machines. Izv. vys. ucheb. zav.; elektromekh. 7 no.9:1066-1081 '64. (MIRA 18:1)

1. Starshiy inzh. otdela turbogeneratorov LEO "Elektrosila"; Severo-Zapadnyy politekhnicheskiy institut (for Boguslavskiy). 2. Kafedra elektricheskikh mashin Leningradskogo instituta aviatsionnogo priborostroyeniya (for Goncharenko). 3. Otdel gidrogeneratorov LEO "Elektrosila" (for Dombrovskiy). 4. Byuro obshchikh raschetov LEO "Elektrosila" (for Kogan). 5. Nachal'nik laboratorii schetnoreshayushchikh ustroystv Leningradskogo filiala Vsesoyuznogo nauchno-issledovatel'skogo instituta elektromekhaniki (for Sivkov). 6. Institut elektromekhaniki Gosudarstvennogo komiteta po elektrotekhnike (for Sidel'nikov). 7. Vedushchiy konstruktor otdela turbogeneratorov LEO "Elektrosila" (for Khutoretskiy).

BRAND, Izrail' Al'bertovich; LERNER, Lev Grigor'yevich, aspirant; MAKAROVSKIY, Sergey Aleksandrovich; SIVKOV, Arkadiy Petrovich, inzh.; BAKHVALOV, Yuriy Alekseyevich, kand.tekhn.nauk, dotsent

Use of digital computers in the design of electric machinery and apparatus. Izv.vys.ucheb.zav.; elektromekh. 7 no.12:1501-1505 '64. (MIRA 18:2)

1. Nachal'nik vychislitel'nogo tsentra firmy ChKD [Ceskomoravska-Kolden-Danek], Praga (for Brand). 2. Institut elektromekhaniki Gosudarstvennogo komiteta po elektrotekhnike pri Gosplane SSSR (for Lerner). 3. Zamestitel' nachal'nika raschetnogo otdela Tsentral'nogo konstruktorskogo byuro krupnykh elektricheskikh mashin peremennogo toka Gosudarstvennogo komiteta po elektrotekhnike pri Gosplane SSSR (for Makarovskiy). 4. Nachal'nik laboratorii schetnoreshayushchikh ustroystv Leningradskogo filiala Vsesoyuznogo nauchno-issledovatel'skogo instituta elektromekhaniki (for Sivkov). 5. Kafedra elektricheskikh mashin, apparatov, matematicheskikh i schetnoreshayushchikh priborov i ustroystv Novocherkasskogo politekhnicheskogo instituta (for Bakhvalov).

[illegible], A. I.

Chemistry - Study and Teaching

Apparatus for obtaining gases. Khim. v shkole no. 3. 1952.

Monthly List of Russian Accessions Library of Congress November 1952 UNCLASSIFIED.

1. SIVKOV A. S.

2. USSR (600)

4. Nitrates

7. Substituting lead nitrate for silver nitrate. Khim. v shlole No. 6. 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

SIVKOV, A.S.

First convention of teachers of the Komi A.S.S.R. Khim.v shkole 11 no.6:76-77 N-D '56. (MLRA 9:12)
(Komi A.S.S.R.--Chemistry--Congresses)

Sivkov, G. F.

AID P - 1983

Subject : USSR/Aeronautics

Card 1/1 Pub. 135 - 7/20

Author : Sivkov, G. F., Eng. Lt. Col. Twice Hero of the Soviet Union

Title : Taking account of wind in flight for maximum distance

Periodical : Vest. voz. flota, 5, 40-46, My 1955

Abstract : The author describes in detail how the velocity of the wind should be considered in the computation of the flight distance of an aircraft. He compares the theoretical calculation with practical data and gives several graphs and formulae.

Institution: None

Submitted : No date

S/147/59/000/04/006/020
E022/E435

AUTHOR: Sivkov, G.F. (Moscow)

TITLE: Most Advantageous Manoeuvres in a Vertical Plane for Aircraft of Variable Mass

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1959, Nr 4, pp 52-63 (USSR)

ABSTRACT: The criteria for the assessment of the optimal manoeuvres of aircraft will differ in accordance with the requirements (ie the main designation) specified for these aircraft. Thus we may require either the minimum time of a manoeuvre or maximum speed or maximum range or minimum consumption of fuel etc. The object of this article is to present a general treatment in the form of a set of differential equations, which on integration and introduction of the boundary conditions, will be applicable to a wide range of the criteria of the optimum performance. The aircraft is considered as a particle and the available thrust force (P) and the consumption of fuel per second (C_s) are assumed to be some known function of the altitude (H), velocity of flight (V) and time (t). Two variants are considered:

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Most Advantageous Manoeuvres in a Vertical Plane for Aircraft of Variable Mass

(1) crafts with wings which supply a lifting force (Y) and (2) wingless crafts. The second variant is applicable also to crafts with wings at very high altitudes (in ionosphere) at which the wings are no longer effective, ie cannot produce any lift.

1) Crafts with wings. Assuming that the thrust line is always in the direction of motion, Eq (2) and (7) are presented, where the meaning of symbols is as follows:

n_x, n_y - horizontal and vertical load, in general n_x is given by Eq (8) but if the polar characteristic of the wing is approximated by a quadratic parabola, Eq (9) may be used.

L - horizontal displacement
G_T - instantaneous weight of the weight of the craft
Q_o - frontal resistance at zero lift conditions
n_{x_o} - horizontal load at zero lift conditions
G_o - initial weight of the aircraft
S - wing area.

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Most Advantageous Manoeuvres in a Vertical Plane for Aircraft of Variable Mass

Adopting the approach of Mayer (Ref 1), any of the unknown functions of Eq (I) may be investigated, provided that an extremal value of the function is physically possible. As shown in Ref 4, the integrand of the function is given by Eq (10) and the corresponding Euler conditions for existence of the extremum are given by Eq (11) to (17). Employing parabolic approximation to the polar, Eq (18) is obtained, which together with Eq (19) leads to Eq (20) to (24). Simultaneous integration of Eq (I) and (II) will give all the unknown quantities. Because the system of Eq (I) is homogeneous with respect to Lagrange multipliers, the initial value of one of them may be taken arbitrarily, eg as given by Eq (25). The corresponding constant C_L is chosen so as to satisfy the required horizontal distance L_2, which leads to Eq (26). The initial values of the parameters (Eq (27)) are assumed to be known. Several manoeuvres are now considered as follows:

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Most Advantageous Manoeuvres in a Vertical Plane for Aircraft of Variable Mass

A. Minimum consumption of fuel between two points in the same vertical plane, if L_2 is prescribed, or alternatively, if the following are to be obtained in the end, V_2, H_2 and θ_2 (ie if L_2 is not prescribed). Three different variants are discussed: 1) when the thrust and the fuel consumption depend on V, H and t (Eq (28) to (30)); 2) when they depend only on V and H (Eq (31) to (34)) and 3) when $P = P(H,V,t)$ and $C_s = C_s(+)$ only (Eq (30) is always valid).

B. Maximum range. This case is equivalent to the previous one for all three variants. The greatest range ever will be achieved if the final values (V_2, H_2 and θ_2) are not prescribed. This leads to Eq (35).

C. Minimum time. 4) $P = P(H,V,t)$; $C_s = C_s(H,V,t)$. In this case the fuel consumption is not imposed so that Eq (36) is obtained, which determines λ_5.
5) $P = P(H,V)$; $C_s = C_s(H,V)$. The requirements are those of the case 2 and the answer is Eq (37).
6) $P = P(H,V,t)$; $C_s = C_s(t)$. The case is identical with the case 3.

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S/147/59/000/04/006/020
E022/E435

Most Advantageous Manoeuvres in a Vertical Plane for Aircraft of Variable Mass

D. Maximum mean velocity and maximum mean acceleration. These are two variants of the case with the minimum time; where L_2 is prescribed, then we have the case of the maximum mean velocity but if the velocity V_2 is prescribed, then we have the case of maximum mean acceleration.

E. Maximum velocity (at the final point, ie V_2 max). H_2 and θ_2 being free parameters, Eq (38) is obtained to determine the initial value of n_y.

Then for 7) $P = P(H,V,t)$ and $C_s = C_s(H,V,t)$ by Eq (30) and (36), Eq (39) gives the answer.

8) $P = P(H,V)$ and $C_s = C_s(H,V)$ by Eq (34) and (30) again Eq (39) gives the answer.

9) $P = P(H,V,t)$ and $C_s = C_s(t)$, Eq (39) again is the answer.

F. Maximum height. This problem is equivalent to the case above (7, 8, 9).

2. Wingless crafts. Thrust is assumed to act at an angle α to the longitudinal axis of the craft in order

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to produce a lifting force Y. The equations of motion are given by Eq (III). Again, approximating the polar by a parabola, Eq (44) is obtained. The integrand, corresponding to Eq (10), is now given by Eq (46) and the Euler condition for extrema are given by Eq (47) to (54). Then by the mutual relations quoted in Eq (55) to (59), Euler equations become as given by Eq (60) to (64). Employing relations (58), (59) and (40) it will be seen that the system of Eq (IV) does not differ from the system of Eq (II) as far as the boundary conditions are concerned. Thus, the solution of this problem may be considered as the more general case, the crafts with wings being included in it as well. Assuming conditions of Eq (65), the equations transform to those of Eq (V) {Eq (66) to (71)}. Since angle α is usually small then approximately $\sin \alpha = \tan \alpha = \alpha$; $\cos \alpha = 1$ and $\alpha^2 = 0$ and since the thrust diminishes with height less than does the drag, it may be assumed that $P \sim Q_o = \text{const}$, hence the above equations may be

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simplified to those of Eq (72) to (76). If, further, the thrust P and $P - Q_o$ are expressed as known functions of time (Eq (77)) (this is possible since C_s = const, ie $G_o - G_T = f(t)$), these relations become as given by Eq (78) to (80).

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Mission accomplished! Vest. Vozd. Fl. no.4:74-75 Ap '61. (MIRA 14:7)

(Gagarin, Yurii Alekseevich, 1934-)

SIVKOV, I.G., sanitarnyy vrach

Determining granosan in grain. Zashch. rast. ot vred. i bol. 8 no.3:36-37 Mr '63. (MIRA 17:1)

1. Permskaya oblastnaya sanitarno-epidemiologicheskaya stantsiya.

SIVKOV, I. I.

Aug 52

USSR/Medicine - New Drugs

"Clinical Test of the New USSR Drug, Corglicon, Obtained from Lily-of-the-Valley," I. I. Sivkov, Faculty Therapeutic Clinic, First Moscow Med Order of Lenin Inst

Sovetskaya Meditsina, No 8, pp 26-27

Corglicon is a glucoside prepn obtained from leaves of lily-of-the-valley. It is a very active cardiac drug, possessing all the essential qualities of Digitalis derivatives. It is similar to Strophanthus drugs in that its intravenous injection

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produces quick response and in that it has a weak cumulative effect. Its advantages have been demonstrated in treatment of inadequate circulation and chronic disorders of the heart muscle of various etiology. It acts as a sedative on the central nervous system and reduces neuropathic symptoms of the heart.

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SIVKOV, I.I.

Treatment of angina pectoris by intravenous administration of novocaine. Sovet. med. 16 no. 7:33-34 July 1952. (CLML 22:4)

1. Of the Faculty Therapeutic Clinic (Director -- Prof. V. N. Vinogradov, Active Member of the Academy of Medical Sciences USSR), First Moscow Order of Lenin Medical Institute.

SIVKOV, I. I.

Oncology

Dissertation "Significance of the Gastroscopic Method of Investigation in the Diagnosis of Cancer of the Stomach." C"nd Med Sci, First Moscow Order of Lenin Medical Inst, 29 Mar 54. Vechernyaya Moskvā, Moscow, 17 Mar 54).

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