[redacted], A. ...

Peat Bogs

Mechanized preparation of peat fields for operation of machine UKI-TUL., Torf. prom. 29, No. 3, 1952.

Monthly List of Russian Accessions, Library of Congress
May 1952. UNCLASSIFIED.

SHCHEPKIN, A.Ye., inzhener.

Conversion of hydro peat fields for winning milled peat. Torf.prom.33 no.4:11-13 '56. (MLRA 9:9)

1.Torfopredpriyatiye Tesovo 1.
(Peat industry)

ALEKSEYEV, Ye.T.; APENCHENKO, S.S.; BASOV, A.P.; BAUSIN, A.F.; BERSHADSKIY, L.S.; VELLER, M.A.; GINZBURG L. N.; GUSEV, S.A.; DANILOV, G.V.; DOLGIKH, M.S.; DRUZHININ, N.N.; YEFIMOV, V.S.; ZAVADSKIY, N.V.; IVASHECHKIN, N.V.; KARAKIN, F.F.; KUZHMAN, G.I.; LOBANOV, S.P.; MERKULOV, Ya.V.; NIKODIMOV, P.I.; PANKRATOV, N.S.; PYATAKOV, L.V.; RODICHEV, A.F.; SMIRNOV, M.S.; STRUKOV, B.I.; SAVOCHKIN, S.M.; SAMSONOV, N.N.; SINITSYN, N.A.; SOKOLOV, A.A.; SOLOPOV, S.G.; CHELYSHEV, S.G.; SHCHEPKIN, A.Ye.

Fedor Nikolaevich Krylov; obituary. Torf. prom. 35 no.6:32 '58.
(MIRA 11:10)
(Krylov, Fedor Nikolaevich, 1903-1958)

SHCHEPKIN, B. P.

SCHHEPKIN, B.P., glavnyy mekhanik

Increasing the productivity of the MSh-41 mortar pump. Rats. i izobr. predl. v stroi. no.86:6-7 '54. (MLRA 8:8)
(Plastering) (Pumping machinery)

SOV/51-7-2-7/34

AUTHORS: Bulanin, M.O., Denisov, G.S. and Shchepkin, D.N.

TITLE: On the Study of Equilibria During Formation of the Hydrogen Bond in Solutions, Using Infrared Absorption Spectra. The Case of Inseparable Bands. (Ob izuchenii ravnovesiy, obuslovlennykh obrazovaniyem vodorodnoy svyazi v rastvorakh, po infrakrasnym spektram pogloshcheniya. Sluchay nerazdelyayushchikhsya polos)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 2, pp 187-192 (USSR)

ABSTRACT: An infrared absorption spectroscope can be used to determine accurately the concentrations of free and associated molecules in solutions and to find the equilibrium constant K for the reaction of formation of hydrogen bonds. The temperature dependence of the equilibrium constant can be used to determine the energy of the reaction and hence the energy of the hydrogen bond. The present authors discuss theoretical determination of the equilibrium constant K and the integral absorption coefficients c_k of the molecules which make up the associated complex (formed by means of a hydrogen bond between a molecule of the solvent and a molecule of the solute). The discussion deals with the case when the absorption bands of the monomer and the complex are overlapping. Equilibrium of the type $A + B \rightleftarrows AB$ (where A is the solute and B is the

Card 1/2

On the Study of Equilibria During Formation of the Hydrogen Bond in Solutions, Using Infrared Absorption Spectra. The Case of Inseparable Bands.

solvent) is considered. It is shown that the treatment of the experimental results described by Lord and his co-workers (Ref 6) leads to considerable errors. A better method of determination of K and ε_k is described; this method uses the least-squares technique. The paper is entirely theoretical. Acknowledgment is made to Prof. V.M. Chulanovskiy for his advice. There are 4 figures, 1 mathematical appendix and 9 references, 2 of which are Soviet, 4 English, 1 French, 1 German and 1 from an international journal.

SUBMITTED: November 28, 1958

67155

SOV/51-7-6-9/38

24.3410

AUTHORS: Chulanovskiy, V.M., Pevsakhson, I.V. and Shchepkin, D.N.

TITLE: Determination of the Absolute Values of Parameters Characterizing the Intensity in Infrared Absorption Spectra in the Absence of Secular Distortions

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, No 6, pp 763-769 (USSR)

ABSTRACT: In currently used infrared single-beam automatic-recording spectrophotometers the so-called secular distortions, due to inertia of the amplifying and recording parts of the apparatus at the usual scanning rate cause great difficulties in determination of the true values of spectral parameters. The authors employed the following method which avoids these secular distortions. Recording was started with the beam cut off in order to obtain the zero level of intensity. Then a cell containing pure solvent was introduced into the beam (the corresponding intensity was I_0). As soon as the recorder started to draw a straight line parallel to the zero line a cell containing solution was introduced into the beam and the corresponding intensity I recorded. Again when the recorder began to draw a line parallel to the zero line the beam was cut off completely. In this way a record shown in a figure 4

Card 1/2

Determination of the Absolute Values of Parameters Characterizing the Intensity in Infrared Absorption Spectra in the Absence of Secular Distortions

on p 764 was obtained. The time lost by this process was fully compensated by the great simplicity and reliability of measuring intensity I, which was required to determine optical density. The return to zero after each cycle of measurements avoids the necessity of controlled records. Under the conditions described, the secular distortions are avoided entirely and the distortions due to noise can be easily found. The authors describe three methods of determining spectral parameters, such as optical density at the band maximum, integral density and half-width of the band, corrected for distortions due to the monochromator and expressed in terms of the latter's apparatus function. The computational work reported in this paper was carried out by I.V. Peysakhson and the experimental part was carried out by D.N. Shchepkin. There are 1 figure and 5 references, 3 of which are Soviet and 2 English.

4

SUBMITTED: May 14, 1959

Card 2/2

Determination of the Absolute Values of the Intensity Parameters in an Infrared Absorption Spectrum when Secular Distortions are Absent. II.

slits; $\Delta\nu_c$ is the normal spectral widths of the slits; $\Delta\nu_e$ is the effective spectral width of the slits; b is the observed band half-width (its width when $K = 0.5\,K_m$); b_0 is the true half-width assuming a dispersion form of the band contour; K_m is the optical density observed at the absorption maximum; k_m is the true optical density calculated for a given slit-width assuming a dispersion form of the band contour; k_m^* is the true optical density calculated using the three-point technique (cf. Part I). The relative error in determination of k_m and b_0 was 0.4-0.7%. The maximum departure of single values from the means did not exceed 1% for slit-widths up to 0.4 band-width. The results for the four absorption bands employed are given separately in Tables 1-4. Table 5 summarizes the results and lists also the values of b_0 and k_m obtained by extrapolation to $\Delta\nu_e = 0$ (cf. Part 1). Table 5 shows that all methods give practically the same values of the optical density at the band maxima, i.e. k_m, k_m^* and $(k_m)_{extrapol}$ are practically the same. There are 2 figures, 5 tables and 2 references, 1 of which is Soviet and 1 from an international journal.

4

SUBMITTED: June 1, 1957

Card 2/2

Experimental Determination of the Infrared Absorption-Band Parameters in Liquids

the optical density at the absorption maximum; k_m is the optical density at the absorption maximum found using Peysakhson's Eq (8); k'_m is the optical density at the absorption maximum calculated using Peysakhson's Eq (7); b_s(extrapol.) is the band width found by extrapolation to the zero slit width using Peysakhson's Eq (6); $b_0^2 = b_s^2 + c_2 l \Delta\nu_s^2$, k_m(extrapol.) is the optical density found by extrapolation to the zero slit width using Peysakhson's Eq (8): $K_m = k_m - c_1 \Delta\nu_s^2$. The values of b, K_m, k_m, k'_m, b_0 of chloroform (νCH, 3020 cm^{-1}, layer thickness of 0.026 mm, $\Delta\nu_0$ = 1.25 cm^{-1}) are given as a function of the slit width s in microns (col 1) in Table 1. Tables 2 and 3 give the same quantities for methyl ethyl ketone (2νC=O, 3417 cm^{-1}, layer thickness of 0.090 mm, $\Delta\nu_0$ = 1.8 cm^{-1}, and a solution of diphenylamine in CCl_4 (0.00745 mole/litre, νNH, 3437 cm^{-1}, layer thickness of 3 cm, $\Delta\nu_0$ = 1.40 cm^{-1}). The mean values of b_0(extrapol.), b_0, k_m(extrapol.), K_m, k'_m for all the three substances are given in Table 4.

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Card 2/3

Experimental Determination of the Infrared Absorption-Band Parameters in Liquids

	chloro-form	methyl ethyl ketone	diphenyl-amine in CCl_4
b_c (extrapol.)	15.4	32.5	26.7
b_c	15.2	33.0	26.2
k_m (extrapol.)	0.846	0.980	1.846
k_m	0.850	0.985	1.845
k_c'	0.650	0.958	1.836

The $b^2(\Delta\nu_0^2)$ and $K_m(\Delta\nu_c^2)$ dependences for chloroform are shown in Figs 1 and 2 respectively; the straight lines which are obtained confirm the validity of Peysakhson's Eqs (5) and (6). The relative error in various methods of determination of b_c and k_m, as indicated by the scatter of the points obtained, amounts to 0.4-0.7%; the maximum departures of individual measurements from the mean values do not exceed 1% for slit widths up to 0.4 of the band width. There are 2 figures and 4 tables.

Card 3/3 Note: This is a complete translation.

SITCHEPKIN D.N.

STRUCTURE AND PHYSICAL PROPERTIES OF MATTER IN A LIQUID STATE reports read at the 4th Conference convened in KIYEV from 1 to 5 June 1959, published by the publishing House of KIYEV University, KIYEV, USSR, 1962

BORGEST, V.A.; SHCHEPKIN, D.N.

Simple infrared spectrometer having a diffraction grating based on an IKS-6 instrument. Prib. i tekh. eksp. 7 no.2:173-174 Mr-Ap '62. (MIRA 15:5)

1. Leningradskiy gosudarstvennyy universitet.
(Spectrometer) (Diffraction gratings)

SHCHEPIN, G.G.

McLain's and Mal'tsev's postulates for one class of regular operations on groups. Usp. mat. nauk 20 no.3:219-226 My-Je '65. (MIRA 18:6)

SHCHERBIK, G.G.

Entrance problem for the nilpotent product of finitely presented groups. Dokl. AN SSSR 140 no.2:294-297 S '61. (MIRA 14:9)

1. Moskovskiy gosudarstvennyy pedagogicheskiy institut im. V.I. Lenina. Submitted June 2, 1964.

AUTHOR: Shchepkin, G.V., Candidate of Technical Sciences, Lecturer.

122-2-4/23

TITLE: Designers' reference sheets. The design of shafts for endurance strength. (Listki dlya konstruktora. Raschet valov na vynoslivost')

PERIODICAL: "Vestnik Mashinostroyeniya" (Engineering Journal), 1957, No.2, pp. 25 - 30 (U.S.S.R.)

ABSTRACT: Well known expressions for stresses due to combined loads and the effective strength under various types of load cycles are assembled and design computation procedures for determining the reverse factor under actual loads are presented with the help of some typical examples of stepped shafts and axles.

There are 5 figures, including 3 graphs and 4 Slavic references.

Card 1/1

AVAILABLE: Library of Congress

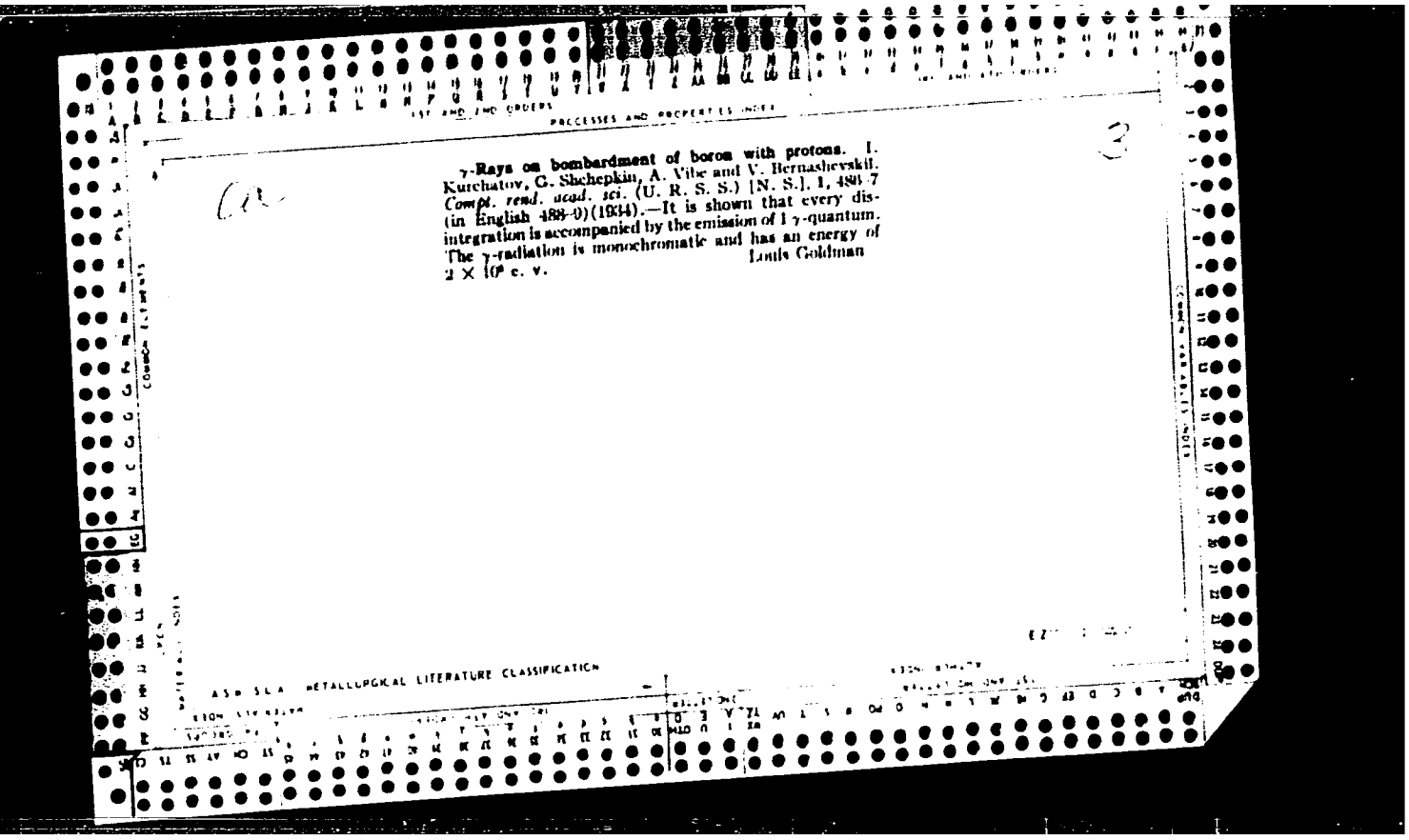
SHCHEPKIN, G.V.

Static-strength analysis of shafts and axles. Trudy KhPI. Ser.mash. 19 no.5:125-13[illegible] '59. (MIRA 14:9)

(Strength of materials)

SHCHEPKIN, G. Ya.

Mbr., Leningrad Physco-Technical Inst., Dept. Physico-Math. Sci., Acad. Sci., -1930-43-.
"On the Question of the Radioactivity of He3," Zhur. Eksper. i Teoret. Fiz., No. 4, 1934;
"Scattering of Slow Neutrons by Hydrogen," ibid., No. 5, 1935; "Neutron Energy and the
Fermi Effect," ibid., No. 8, 1938; "The Proportional Counter of Protons," ibid., 9, No. 2,
1939; "On the Methods Used for Studying the Scattering of Alpha Particles in Gases," ibid.,
10, No. 1, 1940.



γ-Rays on bombardment of boron with protons. I. Kurchatov, G. Shchepkin, A. Vibe and V. Bernashevskii. *Compt. rend. acad. sci.* (U. R. S. S.) [N. S.], 1, 489-7 (in English 488-9)(1934).—It is shown that every disintegration is accompanied by the emission of 1 γ-quantum. The γ-radiation is monochromatic and has an energy of 2×10^6 e. v.

Louis Goldman

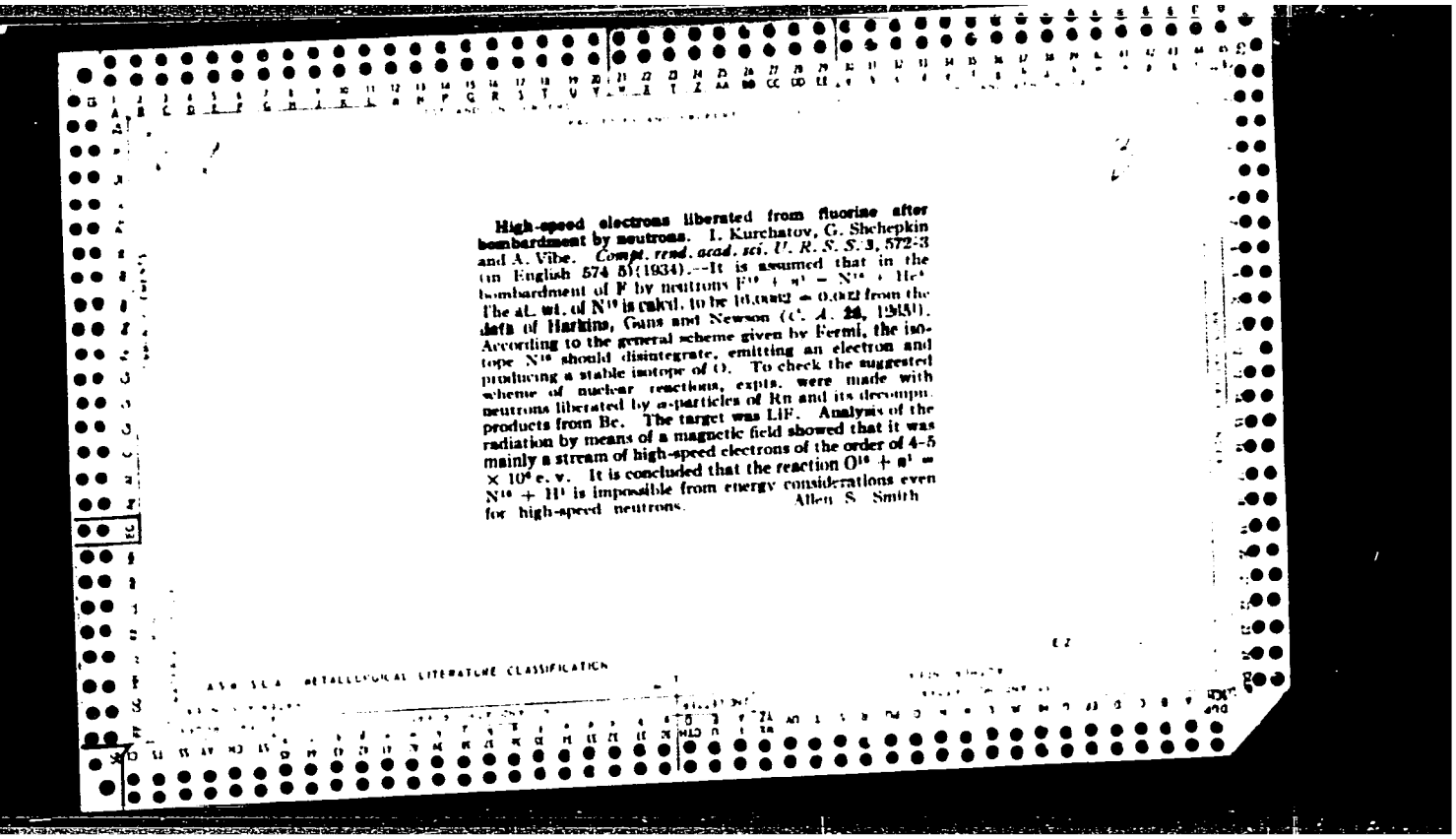
SHCHEPKIN, G.

Fermi effect in phosphorus. I. V. Kurchatov, L. Muisovskiy, G. Shchepkin and A. Vibe. Compt. rend. acad. sci. U.R.S.S. 3, 221-3 (in English 224-5) (1934).- In addn. to the half-life period of 3 hrs. found by Fermi for the radioactive element formed by the neutron bombardment of P, there is another of 3 min. For a 10-min. bombardment the radiation from the short-life disintegration is 6 times as intense as that for the half life of 3 hrs. The short-life radiation is also harder. It is suggested that the half-life period of 3hrs. is due to Si^{31} formed by neutron capture of P with the emission of a proton, in agreement with Fermi, while the half-life period of 3 min. is due to Al^{28} formed by neutron capture of P with the emission of an a-particle. Morris Muskat

The Fermi effect in aluminum. B. Kurchatov, L. V. Kurchatov, G. Shchepkin and A. Vibe. Compt. rend. dead. sci. U.R.S.S. 3, 226-7 (in English 228-9) (1934).- In addn. to the half-life period of 12 min. previously reported by Fermi for the radioactive element formed by the neutron bombardment of Al, there is an intense radiation with a half life of over 12 hrs. The 12-min. radiation is also accompanied by a radiation, of the same half life, with intensity corresponding to one quantum for each decompu. Chem. tests show the 12-min. period element to be $RaMg^{27}$ rather than $RaNa^{24}$. The latter probably gives the 12-hr. disintegration. M. M.

SHCHEPKIN, G.

Fermi effect in aluminum. II. I. Kurchatov, L. Muisovskiy, B. Kurchatov, G. Shchepkin and A. Vibe. Compt. rend. acad. sci. U.R. S. S. 3, 422-3 (in English 423-4) (1934).- Al bombarded with neutrons gives 2 radioactive products, one with a short and one with a very long period. The half-decompn. period for the latter product is about 12 hrs. The initial intensity of the -radiation from both products is the same. The counter throws decreased only from 120 to 90 per min. when 5.4 mm. of Pb was used for a screen for the long-period product. This long-period product is shown to be radioactive Na. When an Al nucleus captures a neutron these 2 reactions occur: Al^{27} n^1 = Ra-Mg^{27} H^1 and Al^{27} n^1 = Ra-Na^{24} He^4. It is suggested that the decompns. might occur as follows: Ra-Na^{24} = Mg^{24} e hv1; Ra-Na^{24} = Na^{23} n^1 hv. H. A. Smith



High-speed electrons liberated from fluorine after bombardment by neutrons. I. Kurchatov, G. Shchepkin and A. Vibe. *Compt. rend. acad. sci. U. R. S. S.* 3, 572-3 (in English 574-5)(1934).—It is assumed that in the bombardment of F by neutrons $F^{19} + n^1 = N^{16} + He^4$. The at. wt. of N^{16} is calcd. to be 16.0032 = 0.002 from the data of Harkins, Gans and Newson (*C. A.* **24**, 1935). According to the general scheme given by Fermi, the isotope N^{16} should disintegrate, emitting an electron and producing a stable isotope of O. To check the suggested scheme of nuclear reactions, expts. were made with neutrons liberated by α-particles of Rn and its decomposn. products from Be. The target was LiF. Analysis of the radiation by means of a magnetic field showed that it was mainly a stream of high-speed electrons of the order of 4–5 × 10^6 e. v. It is concluded that the reaction $O^{16} + n^1 = N^{16} + H^1$ is impossible from energy considerations even for high-speed neutrons.

Allen S. Smith

The radioactivity of He^3. I. V. Kurchatov, K. D. Sinelnikov, G. Shchepkin and A. Vebe. Physik. Z. Sowjetunion 5, 922-6 (1934).- From energy considerations the decompn. of He^3 into H^3 and a positron is possible. The authors however, find no positron emission and conclude that the above disintegration is highly improbable or that the period of decay is at least about 3 years, an unlikely value

SHCHEPKIN, G.

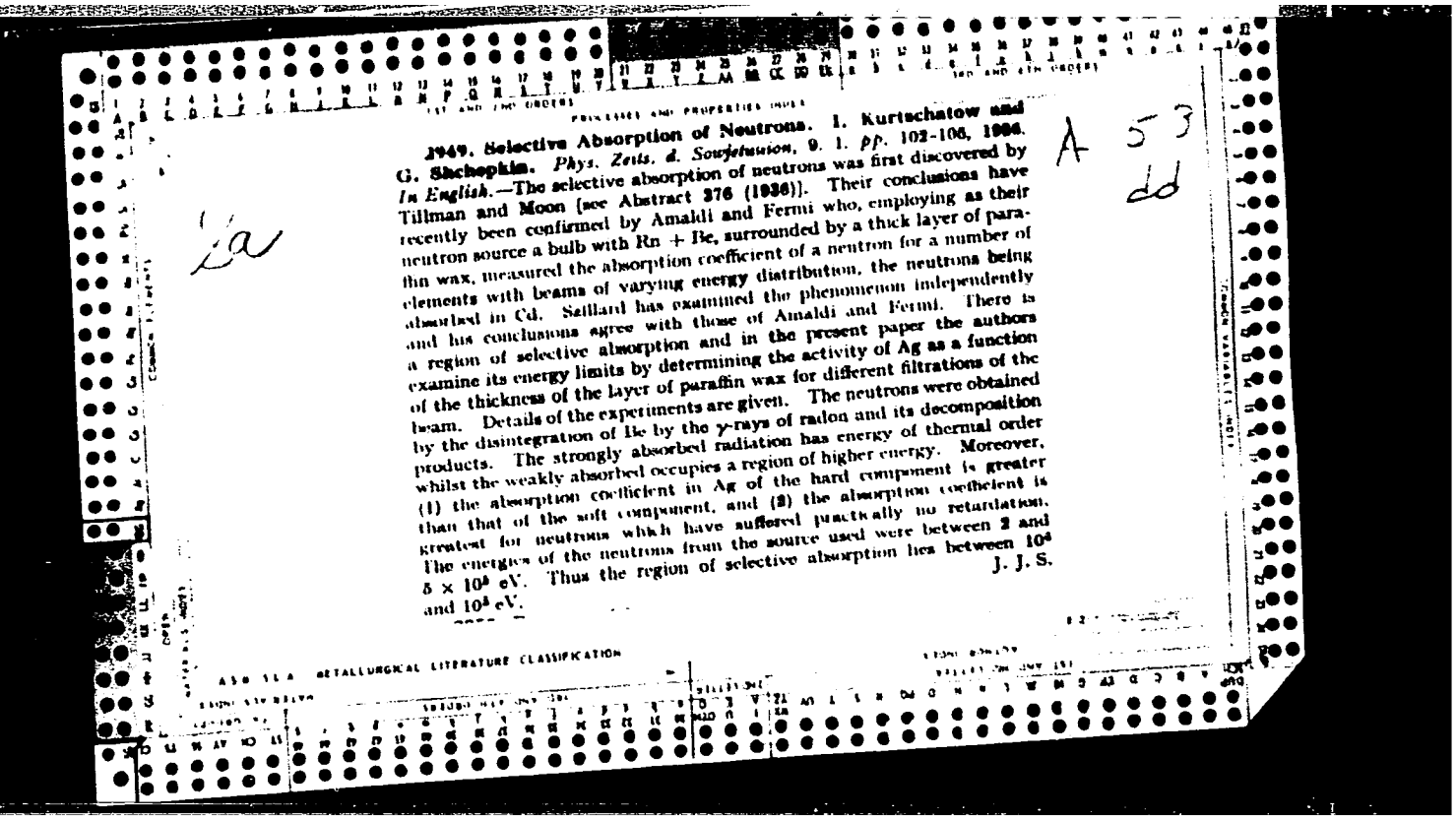
Dispersion of slow neutrons by hydrogen. M. Eremeev, I. Kurchatov and G. Shchepkin. J. Exptl. Theoret. Phys. (U.S.S.R.) 5, 355-9 (1935).- The collision radius for very slow neutrons with protons as detd. from the mean free paths by collision in aq. soln. is about 2 X 10 $^{-12}$ cm. F. H. Rathmann

SHCHEPKIN, G.

The energy of neutrons and the Fermi effect. I. Kurchatov, L. Muisovskiy, M. Eremeev and G. Shchepkin. Physik. Z. Sowjetunion 7, 257-61 (1935).- The radioactivity of Al, Si, P. Fe, Br, Ag and I excited by neutrons from F and Be was studied. Whenever the nucleus is formed as a result of capture of a neutron without emission of a heavy particle, radioactivity results. Neutrons from F lead to formation of radioactive P.
A.B.F.D.

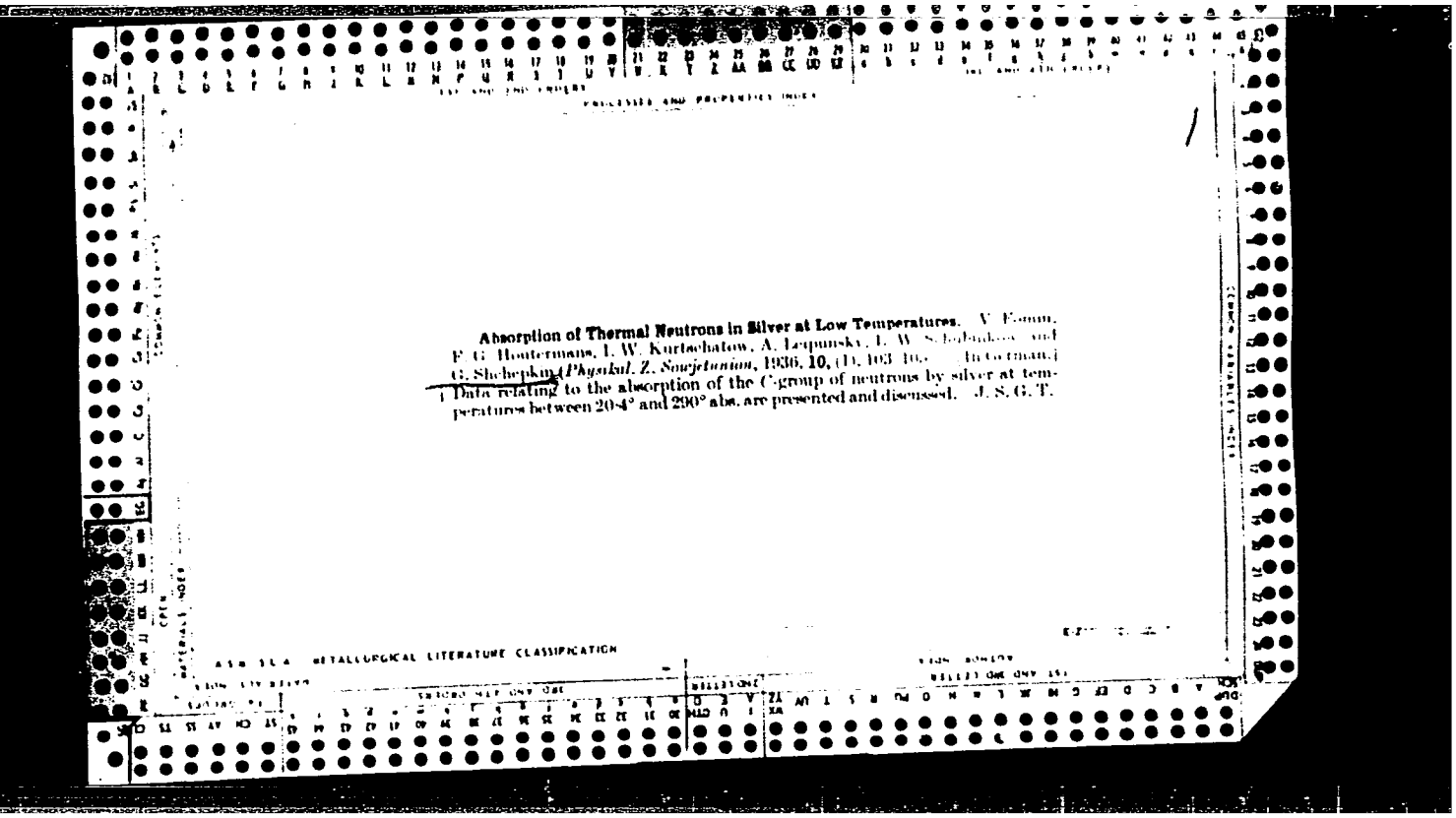
SHCHEPKIN, G.

Scattering of slow neutrons by hydrogen. M. Eremeev, I. Kurchatov and G. Shchepkin. Physik. Z. Sowjetunion 7, 267-73(1935).- A method is described for detg. the mean free path of neutrons in water. The results are used to calc. the collision radius of slow neutrons with protons. This is found to be 2 X 10 - 12 cm.
A. B. F. Duncan

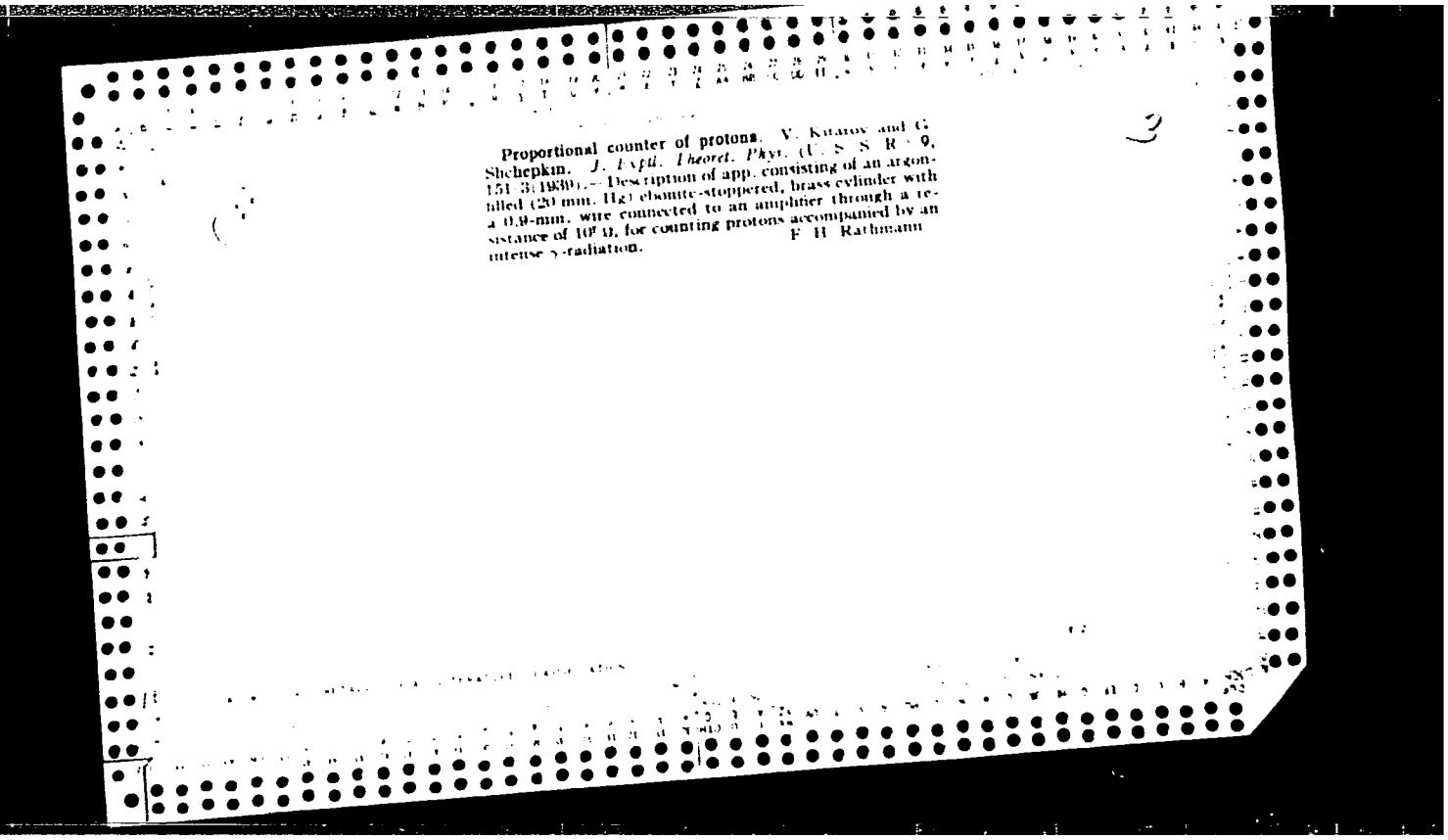


1949. **Selective Absorption of Neutrons.** I. Kurtschatow and G. Shchepkin. *Phys. Zeits. d. Sowjetunion*, 9. 1. *pp.* 102-106, 1936. *In English.*—The selective absorption of neutrons was first discovered by Tillman and Moon [see Abstract 376 (1936)]. Their conclusions have recently been confirmed by Amaldi and Fermi who, employing as their neutron source a bulb with Rn + Be, surrounded by a thick layer of paraffin wax, measured the absorption coefficient of a neutron for a number of elements with beams of varying energy distribution, the neutrons being absorbed in Cd. Saillard has examined the phenomenon independently and his conclusions agree with those of Amaldi and Fermi. There is a region of selective absorption and in the present paper the authors examine its energy limits by determining the activity of Ag as a function of the thickness of the layer of paraffin wax for different filtrations of the beam. Details of the experiments are given. The neutrons were obtained by the disintegration of Be by the γ-rays of radon and its decomposition products. The strongly absorbed radiation has energy of thermal order whilst the weakly absorbed occupies a region of higher energy. Moreover, (1) the absorption coefficient in Ag of the hard component is greater than that of the soft component, and (2) the absorption coefficient is greatest for neutrons which have suffered practically no retardation. The energies of the neutrons from the source used were between 2 and 5×10^5 eV. Thus the region of selective absorption lies between 10^4 and 10^5 eV.

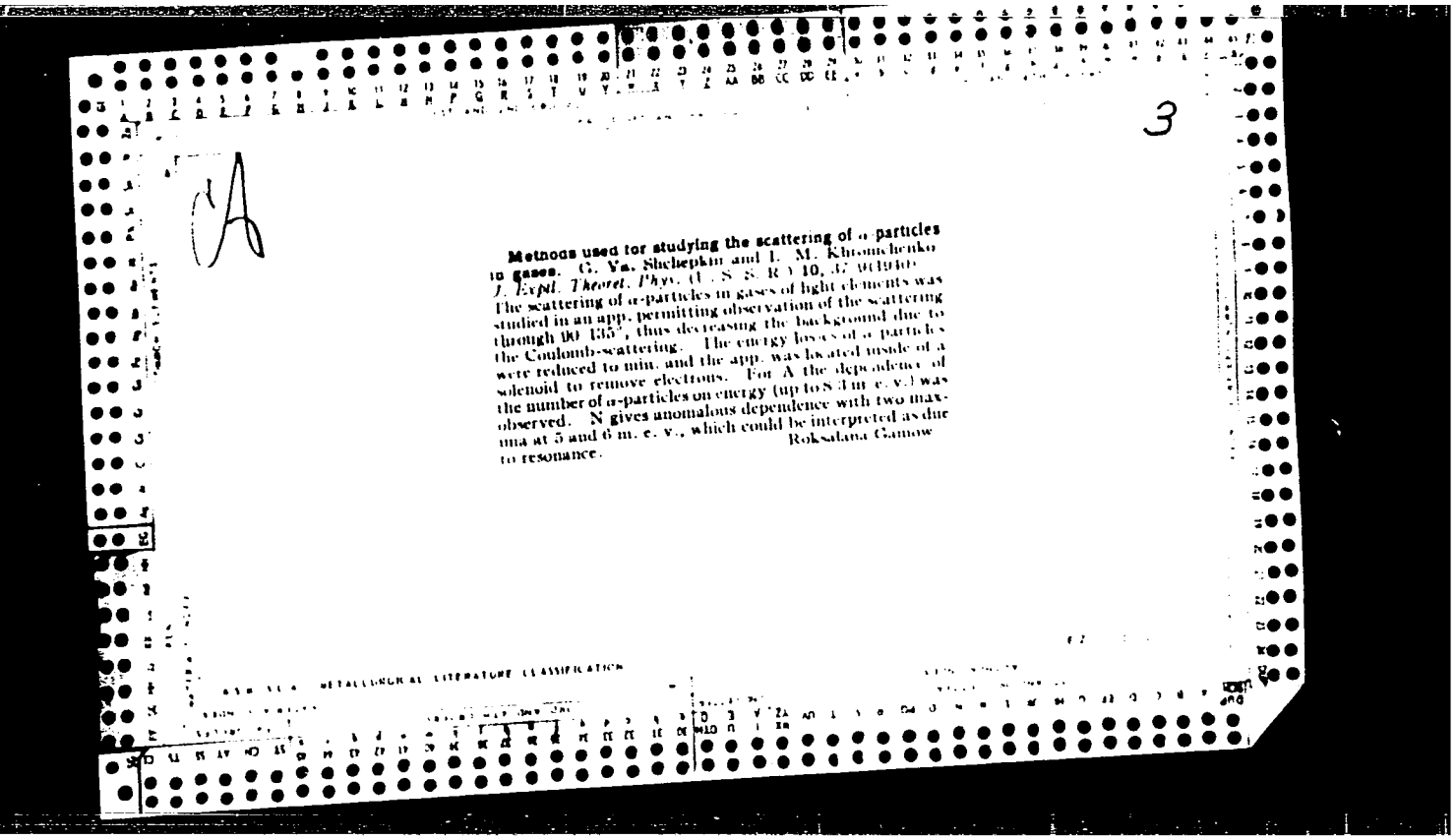
J. J. S.



Absorption of Thermal Neutrons in Silver at Low Temperatures. V. Fomin, F. G. Houtermans, I. W. Kurtschatow, A. Lepunsky, I. W. Schubnikow and G. Shchepkin. (*Physikal. Z. Sowjetunion*, 1936, **10**, (1), 103–106. In German.) Data relating to the absorption of the C-group of neutrons by silver at temperatures between 204° and 290° abs. are presented and discussed. J. S. G. T.



Proportional counter of protons. V. Kurarov and G. Shchepkin. *J. Exptl. Theoret. Phys.* (U. S. S. R.) 9, 151–3 (1939).—Description of app. consisting of an argon-filled (20 mm. Hg) ebonite-stoppered, brass cylinder with a 0.9-mm. wire connected to an amplifier through a resistance of 10^9 Ω, for counting protons accompanied by an intense γ-radiation. F. H. Rathmann



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CA

Methods used for studying the scattering of α particles in gases. G. Va. Shchepkin and L. M. Khromchenko. *J. Exptl. Theoret. Phys.* (U. S. S. R.) 10, 37-9(1940). The scattering of α-particles in gases of light elements was studied in an app. permitting observation of the scattering through 90-135°, thus decreasing the background due to the Coulomb-scattering. The energy losses of α particles were reduced to min. and the app. was located inside of a solenoid to remove electrons. For A the dependence of the number of α-particles on energy (up to 8.3 m. e. v.) was observed. N gives anomalous dependence with two maxima at 5 and 6 m. e. v., which could be interpreted as due to resonance. Roksalana Gamow

METALLURGICAL LITERATURE CLASSIFICATION

AUTHORS: Artsimovich, L. A., Shchepkin, G. Ya., Zhukov, V. V., 89-12-1/29
Makov, B. N., Maksimov,S. P., Malov, A. F., Nikulichev, A. A.,
Panin, B. V., Brezhnev, B. G.

TITLE: Electromagnetic Isotope Separating Device for Heavy Elements of High Resolving Power.(Elektromagnitnaya ustanovka s vysokoy razreshayushchey siloy dlya razdeleniya izotopov tyazhelykh elementov)

PERIODICAL: Atomnaya Energiya, 1957, Vol. 3, Nr 12, pp. 483-491 (USSR)

ABSTRACT: The constructed apparatus, which shall be able to separate clearly isotorpes even with a relative mass difference of 1/240, must have a high dispersion, a high resolving power and especially well stabilized magnetical andelectrical fields. An axial-symmetrical field, the dispersion of which is proportional to the square of the focusing angle, was used as a magnetic field. The focusing angle is 225°. The measured dispersion of the apparatus amounts to 20 mm at a relative mass difference of the masses to be separated of 1%.
The stabilization of the magnetic field of the separating device has been brought to 0,005% by the aid of a valve scheme.The acceleration velocity for the source of ions (up to 40 kV) is stabilized by a double cascade scheme up to 0,01%. But also the current in the discharge source of ions is stabilized. The vacuum chamber is constructed from stainless steel, in a C -sharpe.The

Card 1/3

Electromagnetic Isotope Separating Device for Heavy Element of High Resolving Power. 89-12-1/29

16o to 36o for Pu^{241} concentrated from samples of different isotope compositions

There are 4 tables, 8 figures and 3 Slavic references.

SUBMITTED: August 21, 1957

AVAILABLE: Library of Congress

Card 3/3

ALEKSEYEV, B. A., ZOLOTAREV, V. S., PANIN, V. V., SHCHEPKIN, G. Y. and CHERNOTOTOV, E. S.

"Electromganetic Separation of Isotopes of the Rare-Earth Elements."

paper to be presented at 2nd UN Intl. conf. on the peaceful uses of Atomic Energy, Geneva, 1 - 13 Sep 58.

SHCHEPKIN, G.V., kand. tekhn. nauk

Stress analysis of straight shafts. Izv. vys. ucheb. zav.; mashinostr. no.3/4:35-42 '58. (MIRA 12:5)

1.Khar'kovskiy politekhnicheskiy institut.
(Shafting)

SHCHEPKIN, G. YA.

(4) PHASE I BOOK EXPLOITATION SOV/2713

International Conference on the Peaceful Uses of Atomic Energy. 2nd, Geneva, 1958

Doklady sovetskikh uchenykh; polucheniye i primeneniye izotopov (Reports of Soviet Scientists; Production and Application of Isotopes) Moscow, Atomizdat, 1959. 388 p. (Series: Its: Trudy, vol. 6) 8,000 copies printed.

Eds. (Title page): G.V. Kurdyumov, Academician, and I.I. Novikov, Corresponding Member, USSR Academy of Sciences; Ed. (Inside book): Z.D. Andreyenko; Tech. Ed.: Z.D. Andreyenko.

PURPOSE: This book is intended for scientists, engineers, physicians, and biologists engaged in the production and application of atomic energy to peaceful uses; for professors and graduate and nongraduate students of higher technical schools where nuclear science is taught; and for the general public interested in atomic science and technology.

COVERAGE: This is volume 6 of a 6-volume set of reports delivered by Soviet scientists at the Second International Conference on the Peaceful Uses of Atomic Energy held in Geneva from September 1 to 13, 1958. Volume 6 contains 32 reports on: 1) modern methods for the production of stable and radioactive isotopes and their labeled compounds, 2) research results obtained with the aid of isotopes in the field of chemistry, metallurgy, machine building, and agriculture, and 3) dosimetry of ionizing radiation. Volume 6 was edited by: S.V. Levinskiy, Candidate of Medical Sciences; V.V. Pruzhkov, Candidate of Chemical Sciences; and V.V. Bolov, Candidate of Medical Sciences. See SOV/2081 for titles of volumes of the set. References appear at the end of the articles.

21 (7), 21 (8)

AUTHOR: Rudakov, V. P. SOV/89-7-1-18/26

TITLE: IX All-Union Conference on Nuclear Spectroscopy (IX Vsesoyuznoye soveshchaniye po yadernoy spektroskopii)

PERIODICAL: Atomnaya energiya. 1959, Vol 7, Nr 1, pp 76-79 (USSR)

ABSTRACT: The IX All-Union Conference was held from January 26 to February 2, 1959 at Khar'kov. More than [illegible] participants heard 100 lectures, the most important of which dealt with the following fields. Nuclear Theory. General problems of [illegible]. A. S. Davydov (MGU): Theoretical classification of low-energy excited nuclear states. L. K. Peker: Deformed nuclei. [illegible] Birbrair, L. K. Peker, L. A. Sliv (LFTI): Quadrupole oscillations of deformed nuclei. Ye. [illegible], V. [illegible], S. P. Taytko (KhFTI): Calculation of the ft-values with matrix elements for β-transitions by means of the generalized nuclear model. S. T. Belyayev (IAE): Consideration of pair-correlation in nuclei. [illegible] (IAE): The application of the superconductivity model to nuclei for the purpose of calculating their moments of inertia. P. E. Nemirovskiy (IAE): Problems of the neutron stability of nuclei. [illegible] (IAE): The present stage in the theory of β-decay. [illegible], V. K. Grigor'yev, V. A. [illegible], [illegible] (IAE): Measurement of the angular correlation between electron and neutrino in the decay of the neutron. [illegible], [illegible] Nazarenko, L. I. Rusinov (LFTI): Measurement of the correlation between the transversal electron polarization and circular polarization of γ-quanta occurring in the decay of Sc^{46} and Co^{60}. Decay Schemes. γ-radiation of Nuclei. [illegible] Amufriyev, A. K. Val'ter, Yu. V. [illegible], Ye. [illegible], A. N. L'vov, P. M. Tutakin, S. P. [illegible], P. V. [illegible], A. S. Deyneko, I. Ya. Malakhov, [illegible] (Fiziko-tekhnicheskiy Khar'kovskiy institut (Physico-technical Institute, Khar'kov)): The $Si^{28,29,30}(p,\gamma)$, $Ne^{20}(p,\gamma)$, $S^{32,34}(p,\gamma)$, $Ar^{40}(p,\gamma)$ and $N^{14}(p,\gamma)$ reactions. D. G. Alkhazov, A. P. Grinberg, G. M. [illegible], M. Kh. Lemberg, V. V. Rozhdestvenskiy, [illegible] of the Leningradskiy fiziko-tekhnicheskiy institut (Leningrad Physico-technical Institute). Investigation of the Coulomb excitation of the lower levels of some nuclei during their bombardment by multiply charged ions (C, N, O, and Ne). A. V. Kalyamin, A. N. Murin, V. N. Pokrovskiy, V. A. [illegible] (RIAN). New isotopes Tu^{161}, Ho^{153}, Ho^{155} and Ho^{157}. B. S. Dzhelepov, [illegible] Sergiyenko (LGU): Decay schemes of some neutron-deficient isotopes, set up on the basis of measurements of the coincidence of the internal conversion electrons. Spectroscopy Engineering. B. S. Dzhelepov, M. P. [illegible], [illegible], V. G. Chumin (RIAN): α-spectrometer with double focusing. S. A. Baranov, [illegible], A. G. [illegible], A. F. [illegible], V. Ya. Shchedrin (IAE): Improved α-spectrometer. [illegible] Barchuk, G. V. Belykh, V. I. Gol'dshtein, [illegible] (IFAN UkrSSR): Magnetic spectrograph for heavy charged particles. The representatives of the Ministerstvo radiotekhnicheskoy promyshlennosti (Ministry of the Radio-engineering Industry) gave a report about new multipliers. The Conference was closed by B. S. Dzhelepov, who stressed the fact that nuclear tables and reference works ought to be published much more quickly in order to be of real use to the experimenter.

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Card 3/3

21(10), 21(8) SOV/89-7-3-14/29

AUTHORS: Baranov, S. A., Zelenkov, A. G., Shchepkin, G. Ya., Beruchko, V. V., Malov, A. F.

TITLE: A Large α-Spectrometer

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 3, pp 262-264 (USSR)

ABSTRACT: This article is based on a lecture delivered at the 9. All-Union Congress of Nuclear Spectroscopy (Khar'kov, January 1959). The spectrometer developed belongs to the $\pi\sqrt{2}$-type, in which, for the purpose of improving light intensity accompanied by a high degree of resolving power, the radius of the central orbit was considerably enlarged (155 cm). The magnet has the shape of a mushroom and is composed of 3 parts: the core, a cylindrical part, and 2 "hats" (photograph attached). The width of the poles is $\sim$ 70 cm, the distance between them is 35 cm, and the total weight is 90 t. Profiled end pieces are fastened to the pole shoes, their form is calculated by means of an analytical method. The operation chamber has a content of $\sim$ 1000 l. Evacuation is brought about by means of a VN-2 forepump. As a high-vacuum pump a VH-54-type unit is used. The operating vacuum amounts to some 10^{-6} torr. It is possible to measure 4 α-active pre-

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parations successively without the vacuum being influenced The maximum size of the source is 100 . 10 mm. Recording of the α-particles is carried out either by means of a proportional counter or by means of thick-layered photo-plates. The magnetic field coils are fed by a selenium rectifier which is, in turn, connected with a 35 kva motor generator by way of a DN-35 choke. Within the operational range of the device a current of 700-1300 a flows, which corresponds to a field strength of 2.0—3.5 kOe. Stabilization of the magnetic field is described more closely by reference 6. During the measurement the maximum deviation of the magnetic field from the previously adjusted value is less than 2.10^{-4} in the course of 8 hours of perpetual operation. The topography of field distribution was experimentally investigated with great exactitude. Boundary effects were eliminated in accordance with reference 7. On the basis of the topography it was possible to determine the shape of the diaphragms by which the α-beam is bounded. The maximum utilized solid angle of the device is 8.10^{-4} of 4π. The half width of the lines amounts to some hundredth parts of a percent. The dispersion of the device for the α-particles of Po^{210} was measured: 1.2 kev/mm The α-sources may have a weight of up to 100 μg Long lived α-radiation sources with a half life of up to 2.10^{10} a still

give useful measuring results. There are 2 figures and 7 references, 2 of which are Soviet.

SUBMITTED: May 8, 1959

S/048/59/023/012/007/009
B006/B060

21.5300

AUTHORS: Baranov, S. A., Zelenkov, A. G., Shchepkin, G. Ya., Beruchko, V. V., Malov, A. F.

TITLE: A Large α-Spectrometer With Double Focusing

PERIODICAL: Izvestiya Akademii nauk SSSR Seriya fizicheskaya, 1959, Vol. 23, No. 12, pp. 1402 - 1410

TEXT: The present paper offers a description of an efficient α-spectrograph ($\pi\sqrt{2}$ - focusing), devised by the authors for the microscopic investigation of the α-decay. The magnetic field distribution in the gap may be approximated by the series $H/H_0 = 1 + a_1\eta + a_2\eta^2 + a_3\eta^3 + \ldots$, where H_0 denotes the field in the central orbit with the curvature radius ϱ_0; $\eta = \frac{\varrho - \varrho_0}{\varrho_0}$. The coefficients of the expansion were chosen to be $a_1 = -1/2$, $a_2 = 1/8$ $a_3 = 3/16$. ϱ_0 was chosen to be 155 cm to allow for the highest possible resolving power of the device and maximum light intensity. The

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A Large α-Spectrometer With Double Focusing S/048/59/023/012/001/009
B006/B060

device, weighing 90 t, consists mainly of the magnet with the excitation winding and of the vacuum chamber placed into the gap between the poles. The width between the poles is ~70 cm, the gap width between them is 35 cm. Fig 1 shows a picture of the complete equipment. Fig. 2 shows a cross-section through the magnet. Pressure reduction down to the magnitude of 10^{-6} torr was rendered possible by the connection of the chamber (~1000 l) to a forepump of type VN-2 and to a vacuum unit VA-5-4. Fig 3 shows a cross-section through the complete spectrometer. The sources (maximum dimensions: 100·10 mm) were placed in a special device. Three similar diaphragms served for the limitation of the α-beam. The diaphragms are placed in the central part of the chamber (under angles of 100, 130, and 160°), where the beam has the maximum cross-section. The measuring of the α-beam is carried out by means of a proportional counter or by thick-layered photographic plates. Simultaneously a set of plates with a total area of 480·90 mm may be exposed. Fig. 4 shows the supply of the magnet schematically. The water-cooled magnet winding consists of a copper bar (170·10 mm cross-section) and has 53 turns. The working current intensity is 700 - 1300 a, corresponding to a field potential of 2.0 - 3.5 koe. More

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details are given in the connection. Fig. 5 shows a scheme of the system, briefly discussed, for the stabilization of the magnetic field. The H-measurement is carried out by means of the paramagnetic proton resonance. A 0.5% aqueous solution of manganese chloride was used for transmission. The solution filled in a vacuum pocket was directly placed in the magnet gap. The block diagram of the field meter is discussed and shown in Fig. 6. The error of this meter amounts to $1 \cdot 10^{-5}$. The investigation of the magnetic field topography is discussed next. For this purpose two devices were developed, one basing on the signal measurement by means of a ballistic galvanometer, the other basing on a signal compensation. Both devices were very sensitive (~0.05 oe/mm). Results may be seen in Fig. 8 and in a table. More accurate data will be supplied in another paper. Finally the ion-optical properties of this device are discussed. Fig. 9 shows the shape of the focal surface. The energy range $\Delta E/E_o$ of the α-particles was ~10% and was simultaneously recorded by photographic plates. The half-width of the lines within the whole range, was ~0.07. The dispersion dE/dx was $\approx 2.28 \cdot 10^{-4} E_o$/mm. This comes up to ~1.2 kev mm^{-1} for Po^{210} α-particles. The resolving power of the device is illustrated by the

A Large α-Spectrometer With Double Focusing S/048/59/023/012/001/009
B006/B060

α-spectrum of Cm^{242}, shown in Fig. 10. Finally the authors thank the following persons for interest and assistance: I. V. Kurchatov, L. A. Artsimovich, V. Z. Bychkov, A. M. Barinov, I. V. Naumov, S. M. Rubchinskiy, M. P. Zel'dovich, V. V. Zhukov, N. N. Semashko, D. V. Pavlov, A. A. Nikulichev, V. M. Kulakov, A. A. Arutyunov, S. N. Belen'kiy, A. I. Timoshinov, A. D. Runov, I. Ya. Leskov, and M. I. Dmitruk. There are 10 figures, 1 table, and 13 references: 6 Soviet.

√c

Card 4/4

L 3170-66 EWT(m) DIAAP

ACCESSION NR: AT5016964 UR/3154/65/000/002/0047/0070 34 12 B+1

AUTHOR: Dmitruk, M. I.; Malov, A. F.; Panin, B. V.; Runov, A. D.; Soldatov, A. F.; Shchepkin, G. Ya.

TITLE: Mass-separation device with magnetic and electric cross-fields intended for the production of pure (C > 99%) rare isotopes of heavy elements 19

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Fizicheskaya elektronika, no.2, 1965, 47-70

TOPIC TAGS: mass separation, lead isotope, cadmium isotope, rare isotope

ABSTRACT: A two-stage mass separator is described, and the results of separation of lead and cadmium isotopes are reported. An electro-magnetic mass separator described by L. A. Artsimovich, et. al. (Atomnaya energiya, 3, 483, 1957) was used as the first stage; its focusing angle 1.25π was changed to $\pi\sqrt{2}$. The second stage, developed after D. Z. Fischer's device (Phys., 133, 471, 1952), has electric and magnetic fields of special configurations in the same space; this arrangement permits the focusing of ions separated according to their masses and energies simultaneously with the vertical and horizontal focusing of particles. The design of the second stage, performed on the basis of the general theory of axisymmetrical

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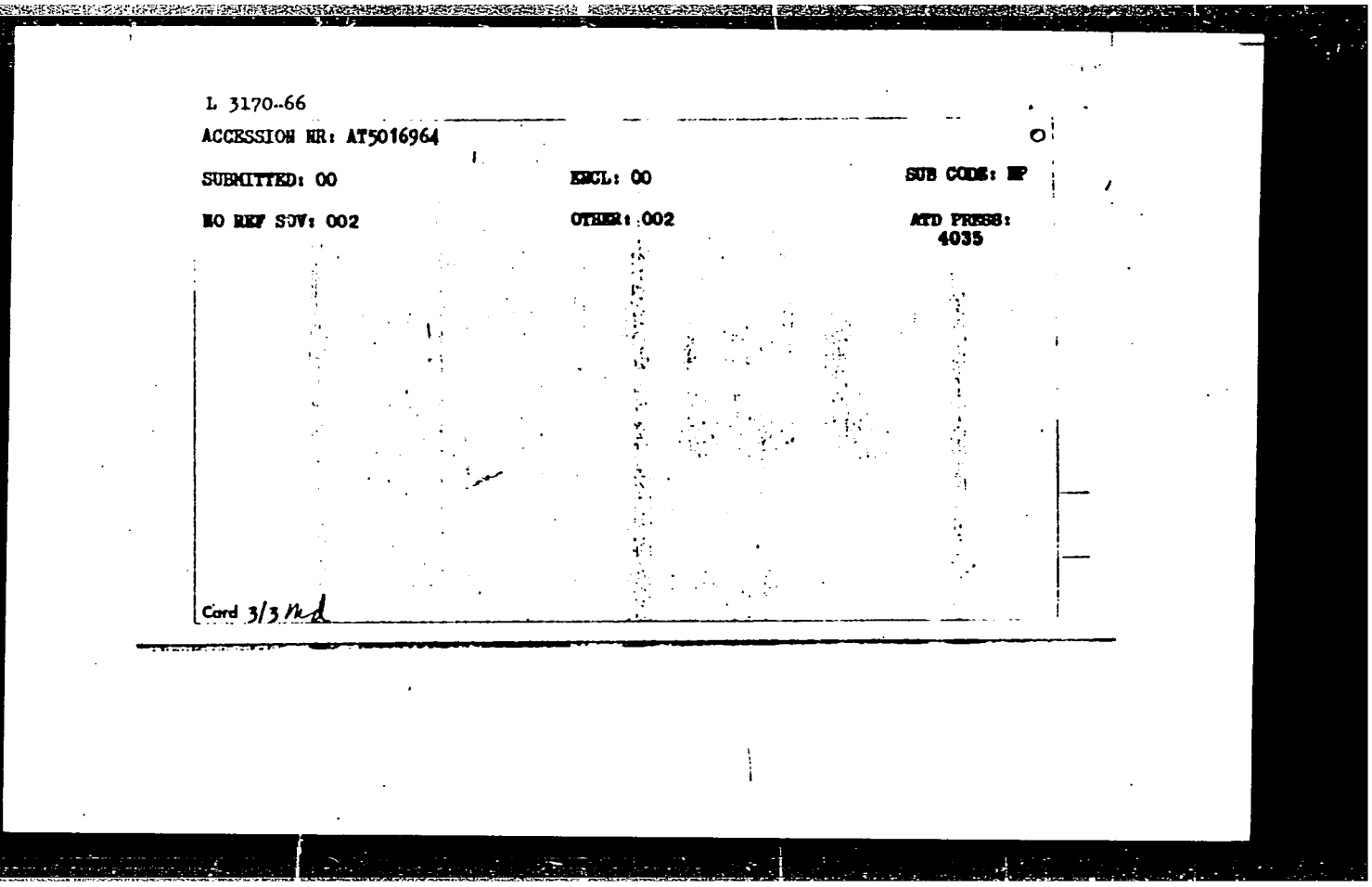
electric and magnetic cross fields, is reported in detail. From estimates of geometrical characteristics, the dispersion of the mass separator for Pb^{206} - Pb^{207} isotopes was found to be 12.24 mm. A theoretical maximum resolution is 250,000; in practice, however, the resolution was under 1000 for Pb^{204} isotope separation. A Pb^{204} sample isolated by the above mass separator had these concentrations: $C_{Pb^{204}} \geq$ 99.64%; $C_{Pb^{206}} = 0.6\%$; $C_{Pb^{207}} = 0.08\%$; $C_{Pb^{208}} = 0.16\%$. Allowing for the contamination of the sample by the natural mixture of Pb isotopes at the separator emitter, the sample must have contained 99.99% Pb^{204}, which corresponds to an enrichment ratio of 700,000. A sample of cadmium enriched in the mass separator contained 99.9% Cd^{114}. "In conclusion, the authors wish to thank L. A. Artsimovich for his constant attention and help and also the workers of the Institute of Atomic Energy im. I. V. Kurchatov and other organizations who took part in development, building of units, and in assembling and alignment of the outfit: V. Z. Bychkov, D. V. Pavlov, A. A. Nikulichev, N. N. Golubeva, V. F. Gavrilov, P. I. Zdobnikov, Yu. I. Kostyutkin, I. Ya. Leskov, I. G. Trifonov, Yu. Ye. Pavlov, I. M. Averin-Lavrov, S. M. Naftulin, V. I. Volosnev, S. I. Zykov, N. M. Bakanova, N. D. Ivanova, G. N. Kyzai and also the group of workers directed by A. A. Dolgiy, V. F. Karpov, and G. A. Khomyachkov." Orig. art. has: 6 figures and 40 formulas.

[03]

ASSOCIATION: none



L 3170-66

ACCESSION NR: AT5016964

SUBMITTED: 00 ENCL: 00 SUB CODE: MP

NO REF SOV: 002 OTHER: 002 ATD PRESS: 4035

Card 3/3

L 39484-65 EWT(1) IJP(c)

ACCESSION NR: AP5004954 S/0286/65/000/002/0056/0057

AUTHORS: Baranov, S. A.; Malov, A. F.; Polevoy, R. M.; Shchepkin, G. Ya.

TITLE: Magnetic charged particle spectrometer. Class 42, No. 167649 9 21 B

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 2, 1965, 56-57

TOPIC TAGS: spectrometer, particle spectroscopy

ABSTRACT: This Author Certificate presents a magnetic charged particle spectrometer with double focusing of the beam in a transverse axially symmetric magnetic field. The spectrometer contains a source and a detector of charged particles located in a vacuum chamber which is placed between the magnet poles. To increase the radiant emittance and dispersion of the device, the beam focusing is accomplished in an angle greater than 360° (see Fig. 1 on the Enclosure). To eliminate the incidence at the particle detector of "background" particles in the first loop of the beam trajectory, a system of diaphragms is placed in the vacuum chamber. Orig. art. has: 1 diagram.

ASSOCIATION: Institut atomnoy energii im. I. V. Kurchatova (Atomic Energy Institute)

SUBMITTED: 25Dec63 ENCL: 01 SUB CODE: NP

NO REF SOV: 000 OTHER: 000

Card 1/2

89860

S/169/61/000/003/018/022
A005/A005

9.9120 (2603, 1041, 1046)

Translation from: Referativnyy zhurnal, Geofizika, 1961, No. 3, p. 34, # 3G290

AUTHOR: Shchepkin, L. A.

TITLE: On the Problem of Ion Formation at the Maximum of Electronic Density of the F2-Layer

PERIODICAL: Tr. Sibirsk. fiz.-tekhn. in-ta pri Tomskom un-te, 1959, No. 37, pp. 49-56

TEXT: The problem of the relative position of the levels of maximum electron density h_m and maximum ionformation h_I is of great importance for the study of the ionozation dynamics of the F2-layer. The diurnal course of the magnitude of the difference $h_m - h_I$ is estimated for the summer season at Irkutsk for average median h_pF2 for 1948-1960 and 1951-1954 under the assumption that h_I coincides with h_m in morning when a sharp decrease of the altitude h_m and a rapid increase in f_oF2 are observed, and that h_I is determined according to the theory of the simple layer. The intensity of ion formation I at the h_m level is almost inchangeable by day after rapid increase in morning. The ratio I/I_o (I for the position of Sun in the zenith) amounts by day to about 1/3 and changes in time and season of year.

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89800

S/169/61/000/003/018/022
A005/A005

On the Problem of Ion Formation at the Maximum of Electronic Density of the F2-Layer

The recombination coefficients at the h_m level are calculated from the obtained values of I/I_o and the given value of I_o. The obtained differences $h_m - h_I$ permitted the estimation of magnitude and speed direction of the vertical drift v of the electronion gas under defined assumptions; the calculations are carried out with the Martin formulae with respect to the observations in the summer season at Irkutsk. For the value $\partial\alpha/\partial z \approx 1.10^{-10}$, the drift speed has a maximum and is directed upwards at 07 o'clock of local time, and a maximum with the direction downwards at 18 o'clock; the minimum speed takes place by about midday and about midnight. The maximum value is $v \sim 10$ and 14 m/sec respectively, for years near to the maximum (1948 - 1950) and the minimum (1951 - 1954) of solar activity. By day is $v \sim 5$ m/sec and changes in direction at about midday.

L. Shch.

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

Card 2/2

S/169/61/000/003/017/022
A005/A005

Perturbations in the F2-Layer According to Observations at Irkutsk

of $|\Delta t|$ in such a manner that it has a maximum in winter by night. The diurnal course of $|\Delta h|$ has a maximum in summer by day, in winter by night. The quantity $|\Delta h|$ has a maximum in summer. The diurnal course of $|\Delta f|$ does not change in shape at the transition from stable to magnitically disturbed days. The statistical regularities are individually considered for positive and negative Δf and Δh. The diurnal course of the positive Δf has by magnetically disturbed days a complicated structure and a relatively small amplitude; the negative Δf has a maximum about in midday and little change at the transition hours with a decrease in f_0F2 and inversely. In magnetically disturbed hours, h'F2 always increases whereat this effect has a maximum by night for $\Delta f < 0$, and by day for $\Delta f > 0$. Some other statistical regularities of the magnitudes Δh and Δf are also studied. A phase shift between the disturbance indices of the magnetic and ionspheric characteristics is discovered. The maximum effect of the magnetic disturbance becomes apparent at Δh through 6-12 hours after the disturbance. From the analysis of the obtained regularities it is concluded that one can consider the negative perturbations f_0F2 as a peculiar magnification of effects which are analogous to those which cause the anomalies of the F2-layer in summer. The

89799

S/169/61/000/003/017/022
A005/A005

Perturbations in the F2-Layer According to Observations at Irkutsk

possible variation in intensity of the ionizing agent δI_o is estimated. By a summer day is $\delta I_o > 0$ for $\Delta f < 0$. In winter δI_o agrees in sign with Δf.

L. Shchepkin

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

Card 3/3

POLYAKOV, V.M.; SHCHUKIN, L.A.

Some characteristics of the behavior of F2 and F1 ionospheric layers over Irkutsk. Geomag. i aer. 1 no.3:374-378 My-Je '61. (MIRA 14:9)

1. Irkutskiy gosudarstvennyy universitet, kafedra radiofiziki.
(Ionosphere)

39107
S/169/62/000/006/091/093
D228/D304

3.5130
9.9110

AUTHOR: Shchepkin, L. A.

TITLE: Peculiarities of ion formation in the ionosphere's F-region and anomalies in the composite F-layer

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 6, 1962, 34, abstract 6G184 (V sb. Ionosfern. issledovaniya, no. 6, M., AN SSSR, 1961, 9-16)

TEXT: Data on the atmosphere's structure obtained in recent years indicate that the altitude temperature gradient (T) of gas decreases sharply, and that a maximum for T may exist at a level of ~200 km. In this context the problem arises of investigating the height-time change in the ion-formation intensity I when the gradient T is variable (with respect to the height). Analyzing the extreme of the function I(z) leads to the conclusion that it is possible for two I_{max}, with $\cos\chi_1 < \cos\chi < \cos\chi_2$ to exist under certain conditions. The I_{max} levels are disposed above and below the height interval

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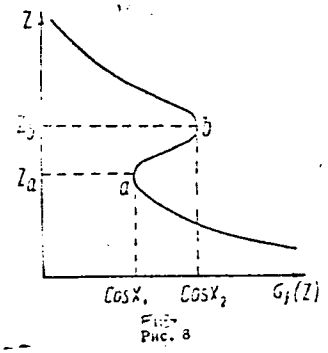
S/169/62/000/006/091/093
D228/D304

Peculiarities of ion ...

(z_a, z_b) in which the ratio $n^2/(dn/dz)$ increases (n being the concentration of ionizable gas). When there is gravitational equilibrium and a full diffusion separation of gases, the condition for the existence of such a height interval has the form: $d^2H/dz^2 > (1 + dH/dz)/H$, where H is the height of the homogeneous atmosphere for ionizable gas. If $\cos\chi < \cos\chi_1$ (see Fig. 8) there is one I_{max}



Фиг.
Рис. 8

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Peculiarities of ion ...

above z_a. When $\cos\chi = \cos\chi_1$ on the lower z_a level the bend I(z) forms, and this bend develops into a maximum of $\cos\chi > \cos\chi_1$. When $\cos\chi = \cos\chi_2$ the upper maximum degenerates into a bend, and if $\cos\chi < \cos\chi_2$ one lower maximum remains, below z_a. A scheme is given for the development of the profile of I(z) in time (with the growth of $\cos\chi$); this is derived on the basis of a series of calculations for hypothetical n (z), corresponding to the conditions cited above. The results obtained allow the seasonal changes in the conditions of F1- and F2-layer formation to be explained. For this it is supposed that $\cos\chi < \cos\chi_1$ in winter throughout the day, that $\cos\chi_1 < \cos\chi < \cos\chi_2$ in the equinoxial season around noon, and that $\cos\chi < \cos\chi_2$ on a summer day. In particular, it is possible to explain the anomalous seasonal variation of f_0F2 with two maxima and the conditions for the F1-layer's appearance in different seasons. [Abstracter's note: Complete translation.]

Card 3/3

SHCHEPKIN, L.A.

Atmospheric structure at different levels in the lower part of the F region of the ionosphere and characteristics of the complex F layer. Geomag. i aer. 1 no.4:540-547 Jl-Ag '61. (MIRA 14:12)

1. Irkutskiy gosudarstvennyy universitet imeni A.A. Zhdanova.
(Ionosphere)

SHCHEPKIN, L.A.

Some specific features of cyclic changes of the F_1 layer over Irkutsk. Geomag. i aer. 1 no.4:619-620 Jl-Ag '61. (MIRA 14:12)

1. Irkutskiy gosudarstvennyy universitet imeni A.A. Zhdanova, kafedra radiofiziki.
(Ionosphere)

42140

S/203/62/002/002/016/017
I046/I246

AUTHOR: Shchepkin, L.A.

TITLE: Geographical distribution of the F2 region critical frequencies in low latitudes

PERIODICAL: Geomagnetizm i aeronomiya, v.2, no. 2, 1962, 365-366

TEXT: The variation with the latitude in the daily behaviour of F_0F2 (critical frequencies of the F2 region) in winter is explained by reversible changes in the formation mechanism of the F2 -maximum (viz., formation of the F2-maximum according to the simple-layer theory, and its formation independently of the ionization-intensity maximum) taking place at time intervals spaced symmetrically with respect to the noon. In higher latitudes (in the winter hemisphere), the direct and the reverse changes, and also the two coincident f_0F2 maxima, occur closer and closer to midday; at a definite latitude, the change in the formation mechanism occurs at noon only, and the two f_0F2 maxima merge at this latitude into one large peak. There is 1 figure.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR (Institute of the Terrestrial Magnetism, the Ionosphere and Propagation of Radiowaves AS USSR)

Card 1/2

S/203/62/002/002/016/017
I046/I246

SUBMITTED: January 26, 1962

Card 2/2

SHCHEPKIN, L.A.

Geographic distribution of the critical frequencies of the F_2 layer at low latitudes. Geomag. i aer. 2 no.2:365-367 Mr-Ap '62. (MIRA 15:6)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln Sibirskogo otdeleniya AN SSSR.
(Ionosphere)

SHCHEPKIN, L.A.

Relationship between the latitude and the conditions for the appearance of the F_1-layer. Geomag. i aer. 3 no.1:173-174 Ja-F '63. (MIRA 16:4)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln Sibirskogo otdeleniya AN SSSR.

(Ionosphere)

ACCESSION NR: AP4001828 S/0203/63/003/006/1053/1058

AUTHOR: Shchepkin, L. A.

TITLE: Latitudinal variation in the conditions for occurrence of the F_1 layer

SOURCE: Geomagnetizm i aeronomiya, v. 3, no. 6, 1963, 1053-1058

TOPIC TAGS: F1 layer, F1 layer occurrence, latitudinal variation, high solar activity, solstice, solar elevation, latitude effect, ionosphere, ionization, ionizing radiation, photoionization, F zone ionization, ionospheric F1 layer, quasimonochromatic radiation, atomic oxygen ionization, solar disturbance, astronomy

ABSTRACT: The latitude variation has been studied as a condition for the F1 layer occurrence during high solar activity. The frequency of observations is denoted by ν and monthly observations are summed up by the characteristic parameter

$$S = \int_0^{2\pi} \nu dt, \qquad (1).$$

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ACCESSION NR: AP4001828

Plots are given for S and r as a function of the latitude from data accumulated during the 1957-59 period, ($r = S_{clear}/S$). The probability of an F1 layer occurrence at low solar altitudes from the horizon is shown to increase by an increase in latitude. The cosine of the solar zenith angle decreases with an increase in latitude, and a maximum value of this parameter is observed at latitude 20° in the summer hemisphere. It is shown that this latitude dependence of F1 may be due to the ratio n_1^2/n_1' and n_2/n_1 on the minimum level of the function $F_1 z$ (ratio of molecular nitrogen to atomic oxygen). This function is related approximately to the cosine of the solar zenith angle $\cos x_1 \approx 1/f(x_1)$

$$1/f(\chi) = \sigma_1 f_1(z)\left(1 + \sum_l \frac{\sigma_l}{\sigma_1}\frac{n_l}{n_1}\right) \equiv \sigma_1 F_1(z), \quad f_1(z) = -n_1'/n_1' \qquad (2).$$

"The author is grateful to L. N. Sokolova and L. S. Ly*senok for their help."
Orig. art. has: 6 figures, 4 equations, and 1 table.

ASSOCIATION: Institut zemnogo magnetizma, ionosfery* i rasprostraneniya radiovoln SO AN SSSR (Institute of Terrestrial Magnetism, Ionosphere, and Radio Wave Propagation SO AN SSSR)

Card 2/3 Sub 6 May 63

SHCHEPKIN, L.A.

Latitudinal change in the diurnal variation of the frequency of appearance of the F_1 layer. Geomag. i aer. 4 no.1:185-187 Ja'F '64. (MIRA 17:2)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln Sibirskogo otdeleniya AN SSSR.

ACC NR: AT6027210 SOURCE CODE: UR/0000/66/000/000/0017/0019

AUTHOR: Shchepkin, L. A.

ORG: none

48
B+1

TITLE: Latitudinal and cyclical variations of the conditions of F sub 1 layer appearance in its seasonal development

SOURCE: AN SSSR. Sibirskoye otdeleniye. Sibriskiy institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln. Issledovaniya po geomagnetizmu i aeronomii (Studies in geomagnetism and aeronomy). Moscow, izd-vo Nauka, 1966, 17-19

TOPIC TAGS: atmospheric ionization, solar radiation, solar activity

ABSTRACT: The same author in another paper [3] estimated the rate of ion formation at heights from 150 to 300 km in the 180—911-Å spectral range, using data collected by G. M. Nikol'skiy on the intensity of solar-ionizing radiation during high activity. The model of the atmosphere used by the author and the intensity of ionizing radiation were selected for conditions of maximum solar activity. Both the model of the atmsophere developed by Shchepkin and the values obtained for the rate of ion formation are then used to estimate electron concentrations for cases involving different rates of ion-exchange and dissociative recombination reactions. In the

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L 04687-67

ACC NR: AT6027210

model the atmosphere at 300 km is considered to consist of three components: molecular nitrogen, atomic oxygen, and molecular oxygen. The density and molecular weight of the model atmosphere are taken from the U. S. Standard Atmosphere, 1962. Computations show that the rate of ion formation of O^+ has a maximum at 180 km, while the rates of the other components reach their maxima at 150 km. Satisfactory estimates of the electron concentrations are obtained when the rate of ion-exchange reaction is taken as 3×10^{-12} $cm^3 \cdot cm^{-1}$, and the rate of dissociative recombination reaction is taken as 5×10^{-8} $cm^3 \cdot cm^{-1}$. Orig. art. has: 2 figures. [ATD PRESS: 5064-F]

SUB CODE: 04, 03 / SUBM DATE: 25Dec65 / ORIG REF: 002 / OTH REF: 001

fv

Card 2/2

ACC NR: AT6027211 SOURCE CODE: UR/0000/66/000/000/0020/0027

AUTHOR: Shchepkin, L. A.

ORG: none

TITLE: Estimates of the rates of ion formation and the parameters of recombination processes in the lower part of the F region of the ionosphere

SOURCE: AN SSSR. Sibirskoye otdeleniye. Sibirskiy institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln. Issledovaniya po geomagnetizmu i aeronomii (Studies in geomagnetizm and aeronomy). Moscow, Izd-vo Nauka, 1966, 20-27

TOPIC TAGS: ionosphere, solar activity, sunspot

ABSTRACT: L. A. Shchepkin [2] has investigated the latitudinal and cyclical conditions associated with the appearance of the F_1 layer during periods of high solar activity. The cosine of the zenith angle of the sun (cos x), characterizing the onset and end of the regular appearance of the F_1 layer at noon, is used as an index of the conditions of F_1 layer appearance. The author then plots the cos x values against the Wolf number for sunspot appearance. A direct correlation is found to exist between the cos x values and the mean monthly sunspot numbers. The value of cos x is also seen to decrease with latitude, indicating that the conditions for the formation of the F_1 layer improve with an increase in latitude. The author thanks V. F. Rudenko for doing a considerable number of the calculations. Orig. art. has: 3 tables and 23 formulas. [ATD PRESS: 5064-F]

SUB CODE: 04, 03 / SUBM DATE: 25Dec65 / ORIG REF: 006 / OTH REF: 007

Card 1/1

USSR / Farm Animals. Swine Q

Abs Jour: Ref Zhur-Biol., No 5, 1958, 21486

Author : Shchepkin M. P.
Inst :
Title : The Farrowing Period and the Technique of Its Management (Sroki i sistema provedeniya oporosov)

Orig Pub: Tr. Novocherkasskogo zootekhn.-vet. in-ta, 1957, vyp. 10, 75-87

Abstract: The experiences of sovkozes and kolkhozes in seasonal rotation, all-year-around rotation, and all-year-around non-rotational farrowings are summed up. Likewise, the data concerning the effectiveness of different systems and time of farrowings, studied from statistical and zootechnical materials available in a number of sovkhozes, are given. Under conditions prevailing in Severo-Kavkazskiy Kray, it is recommended

Card 1/2

SHCHEPKIN, N.G.

42636. Vliyaniye Anoksemii Na Gazovyyobmen, Vakatnyy Kislorod I Okislitel'nyy Koefitsiyent Mochi--Pri Uchastii A.I. Ponomarevoy. Byulleten' Eksperim Biologii I Meditsiny, 1948, No. 12, S. 423-27.

SHCHEPKIN, N.G.; MAKARYCHEV, A.I.

Changes in gas exchange and gastric secretion during various functional conditions of the cerebral cortex in dogs. Biul. eksp. biol. med. 47 no.5:23-28 My '59. (MIRA 12:7)

1. Iz kafedry normal'noy fiziologii (zav. - prof. P.K. Anokhin) I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M. Sechenova. Predstavlena deystvitel'nym chlenom AMN SSSR P. K. Anokhinym.

(RESPIRATION, physiol.
eff. of conditioned reflexes on oxygen requirements (Rus))
(GASTRIC JUICE,
secretion, eff. of conditioned reflexes (Rus))
(REFLEX, CONDITIONED,
eff, on gastric secretion & oxygen requirement (Rus))

SHCHEPKIN, N. V.

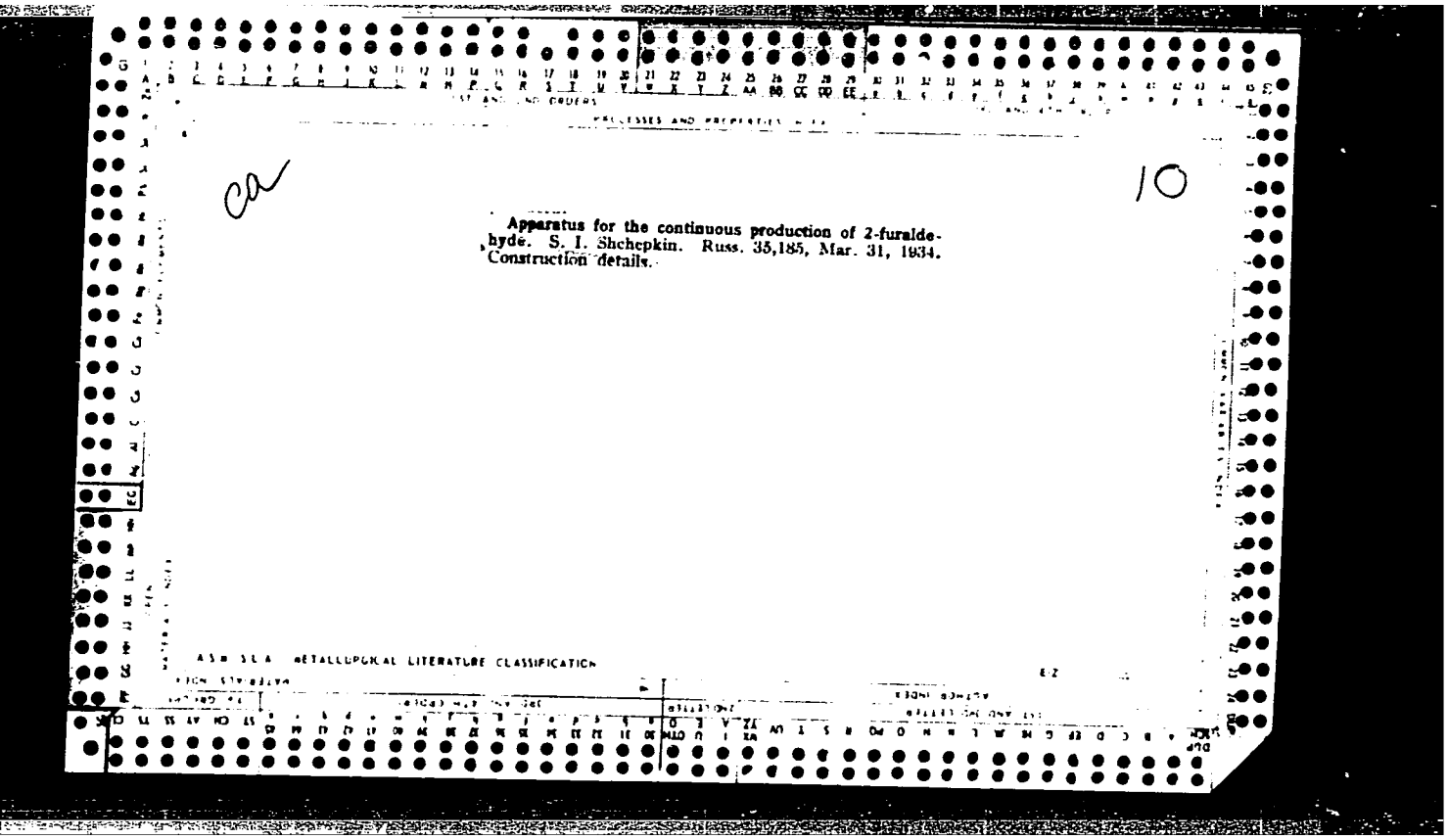
MAZUROV, D.Ya., inzhener; SHCHEPKIN, N.V.

[The road to increased production; experience of the Belgorod cement manufacturers] Po puti sovershenstvovaniia proizvodstva; iz opyta belgorodskikh tsementnikov. [Sostaviteli broshiury, a takzhe avtory vvodnoi stat'i D.IA. Mazurov i N.V.Shchepkin.] Moskva, Gos. izd-vo lit-ry po stroit. materialam, 1954. 77p. (MLRA 7:7)
(Belgorod--Cement industries)

KHOLIN, I.I., kand.tekhn.nauk, otv.red.; LEVMAN, B.S., red.; LOGINOV, Z.I., kand.ekonom.nauk, red.; LYUSOV, A.N., nauchnyy sotrudnik, red.; SHCHEPKIN, M.V., red.; KUZNETSOV, P.V., red.; PONOMAREVA, A.A., tekhn.red.

[Resources of the cement industry of the U.S.S.R.; based on data from the seminar of workers of the cement industry] Rezervy tsementnoi promyshlennosti SSSR; po materialam seminara rabotnikov tsementnoi promyshlennosti. Moskva, Gosplanizdat, 1959. 199 p. (MIRA 13:3)

1. Moscow. Gosudarstvennyy vsesoyuznyy nauchno-issledovatel'skiy institut tsementnoy promyshlennosti. 2. Direktor Gosudarstvennogo vsesoyuznogo nauchno-issledovatel'skogo instituta tsementnoy promyshlennosti (NIItsement) (for Kholin). 3. Gosudarstvennyy vsesoyuznyy nauchno-issledovatel'skiy institut tsementnoy promyshlennosti (NIItsement) (for Loginov, Lyusov).
(Cement industries)



Apparatus for the continuous production of 2-furaldehyde. S. I. Shchepkin. Russ. 35,185, Mar. 31, 1934. Construction details.

SHCHERKIN, S. I.

Kontrol'no-izmeritel'nye i reguliruiushchie pribory v khimicheskikh proizvodstvakh. Moskva, Gos. nauch. -tekhn. izd-vo khim. lit-ry, 1945. 430 p diagrs.

Controlling, measuring and regulating instruments in chemical engineering.

DLC: TP157.S4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

IL'YEVICH, A.P.; SHCHEPKIN, S.I., zasluzhennyy deyatel' nauki i tekhniki RSFSR, professor, redaktor; GRINBERG, I.F., redaktor; PANOVA, L.Ya., tekhnicheskiy redaktor.

[Machinery for ceramic and glass factories] Mekhanicheskoe oborudovanie keramicheskikh i stekol'nykh zavodov. Pod red. S.I.Shchepkina. Moskva, Gos. izd-vo lit-ry po stroit. materialam, 1952. 675 p. (MLRA 7:7)
(Glass manufacture) (Ceramic industries)

SOKOLOV, V.I., doktor tekhnicheskikh nauk, professor; SHKOROPAD, D.Ye., inzhener; ZHIGALOV, S.F., doktor tekhnicheskikh nauk, professor, retsenzent; SHCHEPKIN, S.I., professor, redaktor; MODEL, B.I., tekhnicheskiy redaktor.

[Automatic and continuous centrifuges] Avtomaticheskie i nepreryvno-deistvuyushchie tsentrifugi. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, 1954. 341 p. (MLRA 7:11)
(Centrifuges)

ЩЕПКИН, S. I.

S. I. Shchepkin, M. S. Slobodkin, and V. V. Aronovich, Armatura zapornaya i regulfruyushchaya /Sealing and Regulating Fittings/, Mashgiz, 16 sheets

The booklet describes the design of various types of pipe fittings utilized by enterprises in processing liquids and gases, giving special attention to fixtures which are utilized as control mechanisms in automatic regulation systems, and for remote control of Production processes. The booklet also includes some data on calculation of the durability of the fitting and the technology of its production.

The booklet is intended for technical engineering workers connected with the application of pipeline fittings.

SO: U-6172, 12 Nov 1954

ANDERS, Vasiliy Rudol'fovich; SHCHEPKIN, S.I., prof., retsenzent; NEMTSOV, N.Yu., kand.tekhn.nauk, retsenzent; GOR'KOVA, A.A., vedushchiy red.; TROFIMOV, A.V., tekhn.red.

[Control and measuring devices; introductory course] Kontrol'no-izmeritel'nye pribory; vvodnyi kurs. Moskva, Gos.nauchno-tekhn. izd-vo neft.i gorno-toplivnoi lit-ry, 1958. 143 p. (MIRA 11:1)
(Measuring instruments)

SHORIN, S.N., doktor tekhn. nauk, prof., red.; SHCHEPKIN, S.I., zasl. deyatel' nauki i tekhniki, prof., otv. red.; LASTOVTSEV, A.M., prof. red.; KARAVAYEV, N.M., prof., red.; KOKOREV, D.T., prof., red.; PETROKAS, L.V., prof., red.; RESHCHIKOV, P.M., dots., red.; SOKOLOV, S.N., prof., red.; SOKOLOV, S.I., prof., red.; KHODZHAYEV, A.M., dots., red.; LEBEDEV, K.I., kand. tekhn. nauk, dots. red.; TAIROVA, A.L., red. izd-va; UVAROVA, A.F., tekhn. red.

[Investigation and calculation of heat engineering and power generating processes] Issledovaniia i raschety teploenergeticheskikh i energo-khimicheskikh protsessov; sbornik statei. Pod red. S.N.Shorina. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1961. 137 p. (MIRA 14:10)

1. Moscow. Institut khimicheskogo mashinostroyeniya.
(Heat engineering) (Power engineering)

SHCHEPKIN, S. I.

PHASE I BOOK EXPLOITATION SOV/5896

Kulakov, Mikhail Vasil'yevich, and Sergey Ivanovich Shchepkin

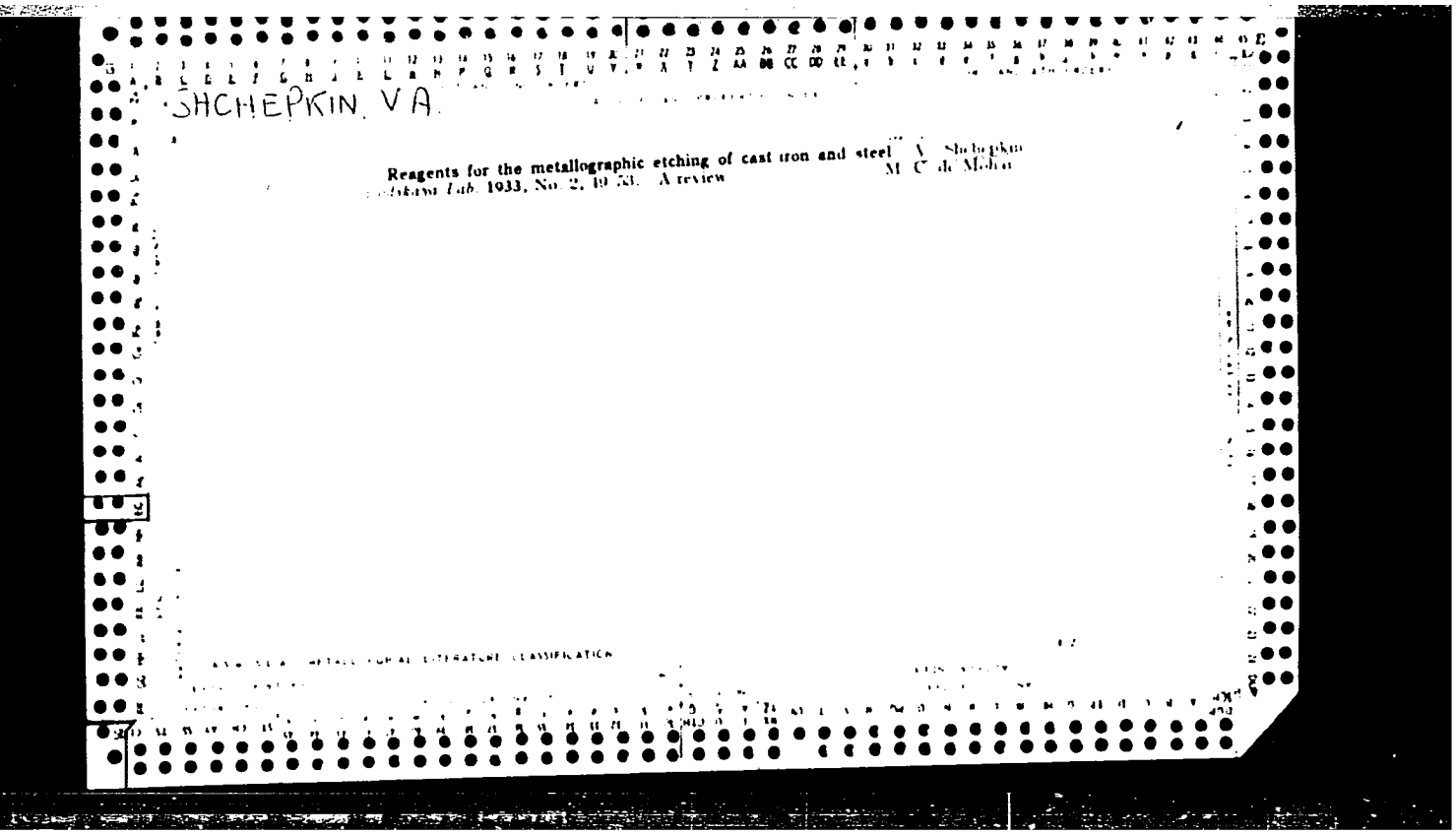
Avtomaticheskiye kontrol'no-izmeritel'nyye pribory dlya khimicheskikh proizvodstv (Automatic Control and Measuring Instruments for the Chemical Industries) Moscow, Mashgiz, 1961. 552 p. Errata slip inserted. 15,000 copies printed.

Reviewers: V. P. Malyshev, Candidate of Technical Sciences, and V. P. Anders, Engineer; Ed.: S. I. Mordovskiy, Candidate of Technical Sciences; Ed. of Publishing House: A. L. Tairova; Tech. Eds.: A. F. Uvarova and Z. I. Chernova; Managing Ed. for Literature on Chemical and Textile Machine Building: V. I. Rybakova, Engineer.

PURPOSE: This book is intended as a handbook for chemical engineers and as a textbook for students.

COVERAGE: The book deals with methods of automatic control and with the operating principles, designs, and advantages and disadvantages of the most widely used measuring devices in the Soviet chemical industry. Problems connected with the installation, checking (or calibration), and operation of these devices are discussed. Fundamental data are given on automatic control devices which are

Card 1/



SHCHEPKIN, V A.

Reagents for the metallographic etching of cast iron and steel. V. Shchepkin
Zavodskaya Lab. 1933, No. 2, 10-23. A review

VOLOSHINOV, B.S., inzhener; SHCHEPKIN, V.A., inzhener.

IuUMZ planetary reduction gears. Vest.mash. 36 no.11:8-12 N'56.
(MLRA 10:1)

(Gearing)

MOLCHANOV, V.V.; [illegible], V.A.; [illegible], D.I.

Drive for a blast furnace charge distributor. Mekh. Tekhnol. no.5:44-46 '61. (MIRA 14:10)
(Blast furnaces--Equipment and supplies)

SHCHEPKIN, V.S.

Homemade solar water heater. Politekh. obuch. no.8:74-75 Ag '58.
(MIRA 11:9)

1.Shkola No.1, Volodarsk.
(Solar water heaters)

SHCHEPKIN, VLADIMIR VYACHESLAVOVICH

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SHCHEPKIN, VLADIMIR VYACHESLAVOVICH.

ANGLO-RUSSKIY SLOVAR' PO SVARKE I REZKE METALLOV (ENGLISH-RUSSIAN GLOSSARY OF TERMS RELATING TO WELDING AND CUTTING OF METALS) MOSKVA, ONTI NKTP SSSR, 1935

164 P. DIAGRS. (BOL'SHAYA TEKHNICHESKAYA ENTSIKLOPEDIYA, OTDEL SLOVAREY, VYP. 1)

ADDED T.P. IN ENGLISH.

BIBLIOGRAPHY: P. (6-7)

ACC NR: AP6032288 SOURCE CODE: UR/0106/66/000/009/0018/0023

AUTHOR: Shakhtarin, B. I.; Shchepkin, Yu. N.

29
B

ORG: none

TITLE: An experimental study of fluctuation noise effects on phase-lock frequency control

SOURCE: Elektrosvyaz', no. 9, 1966, 18-23

TOPIC TAGS: frequency control, phase measurement, PHASE SHIFT ANALYSIS

ABSTRACT: An experimental method for determining the error signal probability density and correlation coefficient caused by fluctuation noise in a phase-lock frequency control system is described. An experimental set-up measures error signal distribution, occurrence frequency of phase jitter, the mean fluctuation frequency of the error signal, and jitter time duration. A digital phase meter with linear characteristics of $-\pi$—$+\pi$ radians with a recorder of random phase disturbance is part of the setup; it consists of a delay circuit, a sawtooth generator, and an oscillograph. The delay circuit, driven by pulses derived from a reference oscillator, controls the input to the sawtooth generator. The output of the sawtooth generator is fed to the vertical input of the oscillograph. A second output from the reference oscillator is fed into the horizontal input of the oscillograph through the phase-lock system and a pulse-shaping circuit. The error signal is displayed on the oscillo-

Card 1/2 UDC: 621.396.668

GALEYEVA, A.Sh.; SHCHEPKIN, Yu.P.

Petrified fetus developing in the abdominal cavity following rupture of a supplementary horn of the uterus. Zdrav. Kazakh. 21 no.2:69-70 '61. (MIRA 14:3)

1. Iz Dzhambulskoy oblastnoy bol'nitsy.
(LITHOPEDION)

CHULANOVSKIY, V.M.; BULANIN, M.O.; DEMISOV, G.S.; SHUVALOVA, Ye.V.; SHCHEPKINA, D.N.

Allowance for the effect of a solvent on the infared specturm of a substance in analytical work. Izv. AN SSSR.Ser.fiz. 26 no.10:1230-1236 O '62. (MIRA 15:10)

(Spectrum, Infared) (Solvents)

POBEDIN, I.S.; TRET'YAKOV, A.V.; SHCHEPNINA, L.V.; REVUNOV, V.A.

Investigating the operation or rotary slitting shears.
Prokat. proizv. no.2:30-43 '60. (MIRA 14:11)
(Rolling mills--Equipment and supplies)
(Shears(Machine tools))

SOV/180-59-4-18/48

AUTHOR: Shchepkina, L.Ya. (Moscow)

TITLE: Magnets of Barium-Oxide Ferrite

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1959, Nr 4, pp 111-113 (USSR)

ABSTRACT: The author discusses briefly the properties, advantages and possible applications of barium-oxide ferrite (approximately $BaO \cdot 6Fe_2O_3$) magnets. Her own experiments were carried out with magnets prepared from a mixture of barium nitrate with iron nitrate or ferric oxide (grade ChDA). The mixture was briquetted and calcined at 1160°C, the briquettes being ground. Size grading of the powder was difficult to control(mainly because of adhesion of particles below 20 microns) but had an important effect on the properties of the magnets made by sintering the powder mixed with paraffin at 1140 to 1220°C. The magnetic properties in relation to sintering temperature, grinding time and chemical composition are tabulated in Tables 1, 2 and 3 respectively. To improve the low remanence of the oxide magnets, sintering at 1200 to 1260°C in a magnetic field was tried in a special apparatus (Fig 1). Fig 2 shows the relation between the field strength and

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L 10461-67 EWT(d)/EWT(l)/EWP(m)/EWT(m) JD
ACC NR: AP6031043 SOURCE CODE: UR/0146/66/009/004/0078/0084

AUTHOR: Shchepkina, V. M. 46

ORG: Leningrad Military Engineering Academy im. A. F. Mozhayskiy (Leningradskaya voyennaya inzhenernaya Krasnoznamennaya akademiya)

TITLE: Effect of hypersonic speed on vertical-channel errors of an inertial system

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 4, 1966, 78-84

TOPIC TAGS: inertial navigation equipment, navigation system

ABSTRACT: The effect is considered of hypersonic speed on the errors associated with determining the altitude of a moving flight vehicle by means of an inertial navigation system. The solution of a system of differential equations that describe the errors of the vertical channel indicates that, with constant sources of error,

Card 1/2 UDC: 62-50

SHCHEPKOVSKIY, L. Ya.

Mechanized means for the storage and conveying of die-casting molds and dies. Mashinostroitel' no.3:13 Mr '63. (MIRA 16:4)

(Technological innovations)

SHCHEPKINA, O. I.

PROCESSES AND PROPERTIES INDEX

The formation of oil in sunflower seed studied during the different stages of the process. O. I. Shchepkina. [illegible] *Uchenye Zapiski Biol. Inst. Kostov* [illegible]; *Chimie & industrie* 43, 680. Contrary to the generally admitted theory according to which sunflower seed oil is formed at the expense of the glucides and is distributed exclusively in the protoplasma cells, it was found that the aleurone grains also contain some. To obtain a max. oil yield it is therefore necessary to destroy the latter as well as the protoplasm. On the other hand, the formation of oil in sunflower seed is closely related to the formation of proteins, there even being an inverse relation between the contents of these 2 constituents. A. Papineau-Couture

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 03/14/2001 CIA-RDP86-00513R001548820005-8"

SHCHEPKINA, O. I.

Soil micro-organisms

D. I. Ivanovskii and certain problems of soil microbiology., Mikrobiologiia, 20, no. 6, 1951.

Monthly List of Russian Accessions, Library of Congress, March 1952. UNCLASSIFIED.

SHCHEPKINA, O.I.

Effect of the Mal'tsev tillage system on the microflora of Azov region Chernozems in Rostov Province. Trudy Inst. mikrobiol. no.7:148-155 '60. (MIRA 14:4)

1. Kafedra fiziologii rasteniy i genetiki Rostovskogo-na-Donu gosudarstvennogo universiteta.
(ROSTOV PROVINCE—SOIL MICRO-ORGANISMS) (TILLAGE)

80950
S/024/60/000/03/012/028
E140/E463

3.3000

AUTHOR: Shchepkina, V.M. (Leningrad)

TITLE: The Effect of Flight Velocity of a Space Vehicle on the Error of an Inertial Navigation System

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1960, Nr 3, pp 96-105 (USSR)

ABSTRACT: At ultrasonic flight velocities the rate of rotation of a space vehicle with respect to the center of the earth reaches appreciable magnitudes and may exceed by a factor of 10 or 12 the angular velocity of revolution of the earth. This angular velocity causes appreciable variation of the errors of an inertial navigation system and gives rise to interaction between the motions of the space vehicle in the lateral and longitudinal directions. The system considered is purely inertial in which the stabilized plane should remain parallel to the plane of the true horizon during the entire time of flight. It is assumed that flight occurs over the arc of a great circle of variable radius (variable height of flight) and the direction of flight coincides with the direction of one of the axes of the stabilized plane.

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E140/E463

The Effect of Flight Velocity of a Space Vehicle on the Error of an Inertial Navigation System

Schuler period. These oscillations are superimposed on an aperiodic motion. It is found that the lateral error for a given forward velocity depends on the error in the initial lateral velocity and the initial adjustment of the platform in the longitudinal and vertical directions and on the deviations of the pitch and azimuth gyroscopes. Calculations show that the last factor is the most important. The error in the longitudinal direction with gyroscope deviation 0.5°/hr is the most important. With better stabilization, the initial errors in the vertical and longitudinal velocities become decisive. The component of longitudinal error due to the initial error in the vertical velocity exceeds the other sources of error with velocities ≤ 5 km/sec. The initial error of the longitudinal velocity is fairly strongly expressed at all flight velocities. It is therefore necessary to maintain a given value of longitudinal flight velocity to a high degree of precision. In all cases the errors decrease with increase of velocity. Acknowledgments

Card 3/4

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S/024/60/000/03/012/028
E140/E463

The Effect of Flight Velocity of a Space Vehicle on the Error of an Inertial Navigation System

are made to Ye.P.Popov who directed this work. There are 6 figures and 1 English reference.

SUBMITTED: January 20, 1960

Card 4/4

USSR/Medicine - Anesthesia, Intravenous Jun 48
Medicine - Pentothal, Toxicity

"Blood Condition During Pentothal Narcosis," Ye. V. Shchepkina, Lab of TsITO (Cen. Inst of Traumatol and Orthopedics), 4 pp

"Khirurgiya" No 6

Research was carried out on 30 patients. Quantity of hemoglobin and erythrocytes in blood decreases during operation under pentothal narcosis. Describes effect of pentothal on leucocytes, lymphocytes, eosinophiles, and monocytes. Concludes that toxic effect of pentothal is no higher than that of other narcotics.

34/49T22