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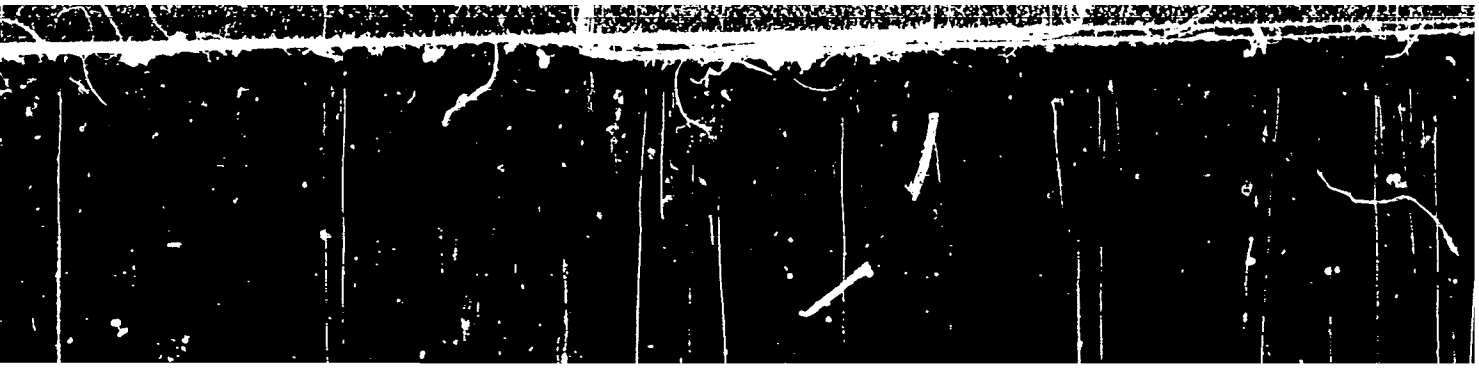

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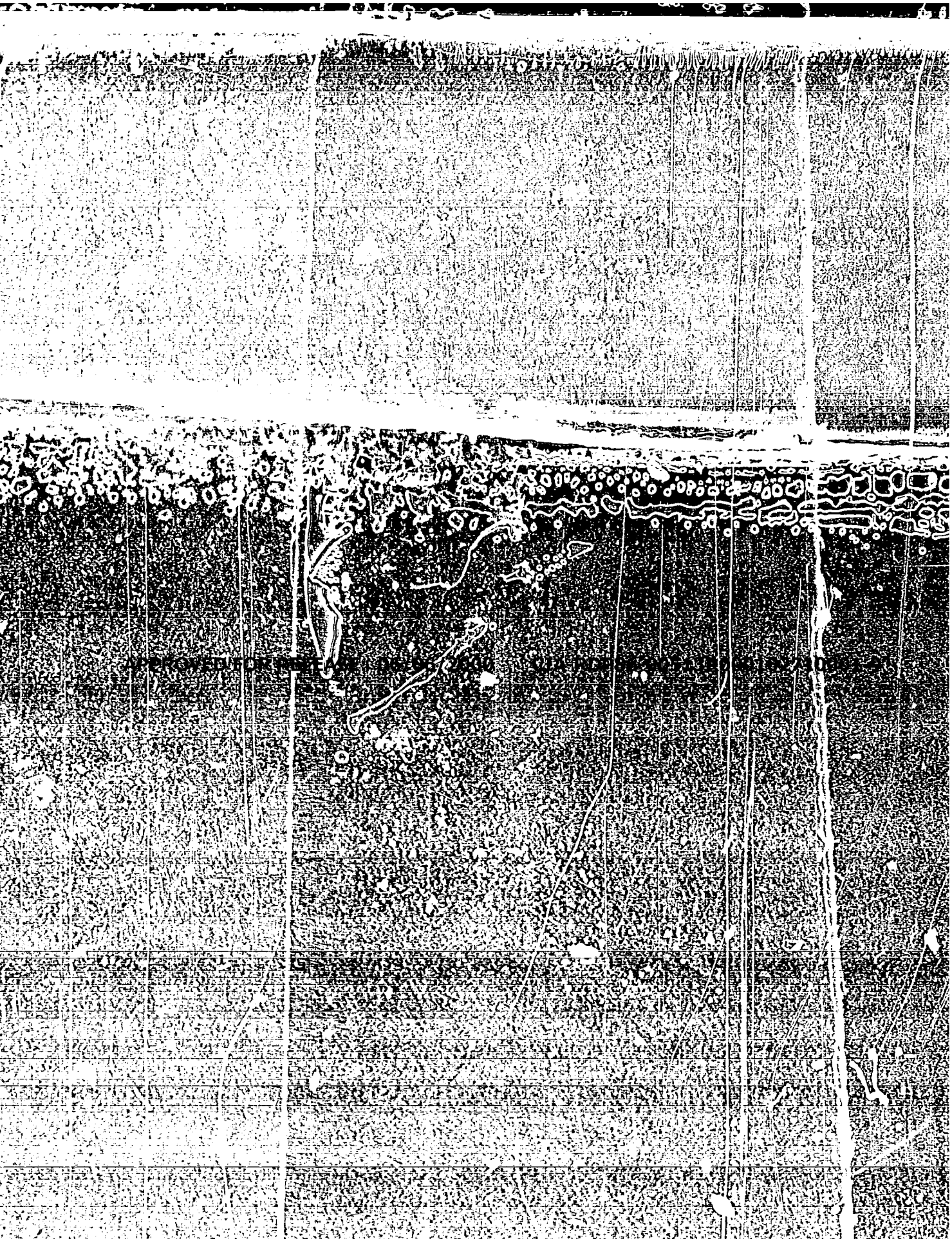

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNBINDER, S. G.

Measurement of galvanic coating thickness with electromagnetic devices. S. Aynbinder and Z. Khubaeva. Lettvijas PSR Zinātņu Akad. Vēstis 1953, No. 12, p. 110 (in Russian).—A soft Fe (Armco) rod, which rests with one end against the galvanic coating (on a ferrous base metal), is surrounded on the other end by a solenoid. As the d.c. through the solenoid is increased, the magnetic attraction between the rod and the ferromagnetic base under the coating increases, but only up to a certain limit field, by magnetic satn. At further current increase, the pull of the solenoid overcomes the attraction. The current necessary to detach the rod from the coating is a measure of the coating thickness. To eliminate the effects of the specimen size, thickness, and variations in magnetic characteristics, the specimen is placed on a table of soft Fe. The precision of measurements with an automatic device was 5% and the time per test was 45 sec. Andrew Dravnieks

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

USSR/Physics - Plastic deformation FD - 3160

AYNBINDER, S. G.

Card 1/1 Pub. 153 - 16/26

Author : Aynbinder, S. G.; Klokova, E. F.

Title : Occurrence of cohesion in metals under joint plastic deformation

Periodical : Zhur. tekh. fiz., 25, No 13 (November), 1955, 2356-2364

Abstract : The authors remark that it is now an established fact (V. D. Kuznetsov, Fizika tverdogo tela [Physics of solids], Vol. 4, Tomsk, 1947) that cohesion (stsepleniye) is an important factor in the process of dry friction, which phenomenon is now being employed in the so-called cold welding of metals (i.e. the joining of metal objects by pressure without any heat). In the present article the authors attempt to study the problem of emergence of cohesion under plastic deformation by means of modeling of natural films by galvanic and lacquered films of various thickness and hardness. They also investigated specimens with oxide films obtained electrolytically. They propose an explanation for the phenomenon of gripping in the case of large specific loads and in the presence of lubricants, and explain the phenomenon of lubrication by light metals. They conclude in the latter case that lubricants prevent the gripping of the harder metal of the bearing. Ten references: e.g. S. G. Aynbinder and E. F. Klokova, Izv. AN Latv. SSR, No 11, 1953.

Submitted : May 26, 1955

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNBINDER, S. [Ainbinders,S] (Riga); Pranch, A. [Prancs,A.](Riga)

Mechanism of the formation and the destruction of the cohesion of different metals in fraction. Vestis Latv ak no.9:47-54 '59. (EEAI 9:10)

1. Akademiya nauk Latviyskoy SSR, Institut mashinovedeniya.
(Fraction) (Metals) (Cohesion)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYMBINDER, T.

"A first-class radio receiver."

So. Radio, Vol. 6, p. 30, 1952

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNBUND, M. M.

Aynbund, M. M., Experience of applying a calculation for obtaining the regime characteristics of sea swells, Tr. Leningr. gidrometeorol. in-ta (Works of the Leningrad Hydrometeorological Institute), No 7, 1958, p 217-219; (RZhGeofiz 11/58-8000)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

VORONTSOV, P.A.; MESHCHERSKAYA, A.V.; SELEZNEVA, Ye.S.; CHESTNAYA, I.I.; AYMBUND, M.M.; KIRILLOVA, T.V.; MESINA, L.V.; OGNEVA, T.A.; SEROVA, N.V.; TIMOFEYEV, M.P., kand.fiz.-mat.nauk; ZHDANOVA, L.P., red.; BRAYNINA, M.I., tekhn.red.

[Meteorological regime of Lake Sevan] Meteorologicheskii rezhim ozera Sevan. Pod red. M.P.Timofeeva. Leningrad, Gidrometeor. izd-vo, 1960. 310 p. (MIRA 14:3)

1. Leningrad. Glavnaya geofizicheskaya observatoriya.
(Sevan Lake region--Meteorology)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNBUND, M.M.

Characteristics of the thermal regime in the strait between the Lesser and the Greater Sevan Lakes. Izv. AN Arm. SSR. Nauki o zem. 7 no.1:19-33 '64. (MIRA 17:6)

1. Sevanskaya gidrometeorologicheskaya observatoriya Upravleniya gidrometeorologicheskoy sluzhby Armyanskoy SSR.

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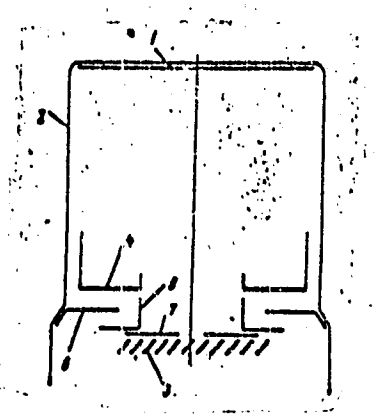
ACC NR: AP6025606

Fig. 1. 1 - photocathode; 2 - container; 3 - dynode; 4 - first intermediate electrode; 5 - second intermediate dynode; 6 - third intermediate electrode; 7 - additional intermediate electrode



current and the signal caused by thermal emission and illumination of the side surface of the container, an electrode with a central hole, whose diameter is no greater than a quarter of the diameter of the central hole of the first intermediate electrode, is placed in front of the dynode. Orig. art. has: 1 diagram.

SUB CODE: 20 / SUBM DATE: 07Jun65

Card 2/2

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

L 1637-66 EWT(1)/EWA(h)

ACCESSION NR: AP5016403 UR/0120/65/000/003/0228/0230
621.385.833

AUTHOR: Aynbund, M. R.; Vil'dgrube, G. S.; Dunayevskaya, N. V.

26
B

TITLE: Louver-type electron multipliers for recording charged particles

25

SOURCE: Pribory i tekhnika eksperimenta, no. 3, 1965, 228-230

TOPIC TAGS: electron multiplier

ABSTRACT: Louver-type secondary-electron multipliers intended for charged-particle recording have been manufactured on the basis of Soviet-made standard FEU-15 and FEU-53 multiplier structures (4 varieties shown). A few manufacturing features, such as mounting, exhaustion, etc., are supplied; an electron-electron gain vs. supply voltage curve for a 20-dynode multiplier is shown. Other characteristics given: with the first dynode grounded and a discrimination level reducing the efficiency by 10%, the number of arising noise pulses is 50-70 per min; output-signal variation is 50% or less when an ion current of 10^{-10} amp is flowing for a long time; geometrical transmission of the louver is about 27%. Orig. art. has 2 figures.

Card 1/2

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L 1637-66

ACCESSION NR: AP5016403

C

ASSOCIATION: none

SUBMITTED: 10Apr64 ENCL: 00 SUB CODE: EC

NO REF SOV: 002 OTHER: 000

Card 2/2 DP

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNEMER, A.I.

Loess dolls in Eolian sediments of the Unguz series. Trudy VSEGEI 42:245-248 '60. (MIRA 14:9)

(Kara Kum--Sandstone)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNEMER, A.I.

Fossils in Takyr-type formations. Trudy VSEGEI 46:364-372 '61.
(MIRA 14:11)
(Kara Kum--Paleontology, Stratigraphic)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

AYNEMER, A.I.; ZHELUBOVSKAYA, N.Yu.; LIKHACHEVA, A.A.; SAPERSON, E.I.

Stratigraphic division and lithological characteristics of a section of a structural-profile well, drilled at the Cheshme hills (central Lower Kara Kum). Trudy VSEGEI 109:302-319 '63.
(MIRA 17:7)

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNGORN, B.M.

AINHORN, B.M.; ZAK, L.U.

Increasing labor production is the most important task in the new five-year plan. Khim.prom.no.1:1-2 Ja'47. (MLRA 8:12)

1. Planovo-ekonomicheskiy otdel Ministerstva khimicheskoy promyshlennosti

(Chemical industries) (Labor productivity)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNGORN, M.A.

Electronic quantizing devices. Radiotekhnika 15 no. 5:39-46 My '60. (MIRA 14:4)

(Electronic calculating machines)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

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L 25093-65 EWT(d)/FSS-2/EWT(1)/EWA(d)/T/EED-2/EWP(1)/EED(b)-3 Po-4/Pq-4/
Pg-4/Pae-2/Pk-4 JP(c) BB/GG

ACCESSION NR: AT 1049775 S/2945/64/000/016/069/0090

AUTHOR: Ayngorn, M. A.

TITLE: A probabilistic model of the photographic process

SOURCE: AN SSSR. Institut problem peredachi informatsii. Problemy* peredachi informatsii, no. 16, 1964. Teoriya peredachi informatsii (Theory of information transmission), 69-80

TOPIC TAGS: photographic emulsion, photograph quality, microdensitometry, probabilistic model, computer simulation, optical image encoding

ABSTRACT: The purpose of this paper was to develop a model of the photographic process which can be used in solving a number of important problems related to the analysis and synthesis of actual photographic systems; the most important of these are: the determination of the information content of photographic data, the determination of the optimal procedure for extracting data from photographic negatives (optimal microdensitometry), the determination of optimal methods of encoding and decoding of optical images using photographic systems for their transmission. The probabilistic character of the photographic process is discussed and a probabilistic model of such a process is proposed. The basic characteristics of the actual photographic process, which are taken into account in

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the proposed model, are enumerated, and the development of such a model is described. The properties of the optical image providing the input signals in the model are discussed; the input signals are considered in the form of a planar distribution of a number of photons. The structural, optical and photographic properties of a model of the photosensitive layer are discussed. The dependence of the photosensitivity of electron traps in emulsion microcrystals on the effective exposure was investigated. The processing (developing and fixing) of an exposed layer and the character of the resultant blackening (negative) are discussed in the light of the proposed model; the negative is represented in the form of distribution of optically opaque particle grains in an optically transparent medium of the layer. The mean value of the optical density was found to depend linearly on the photosensitivity function which, in turn, depends on the effective exposure. It is concluded that the linear dependence of mean density on the effective exposure defines the characteristic of the proposed model of the photographic process. The value of the dispersion of the optical density of the negative is determined. A structural schematic of the proposed model, with the granularity at first left out and then taken into account, is discussed. The manner in which fogging is taken into account in the model is shown. An analytical comparison between the fundamental characteristics of the actual photographic

Card 2/3

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ACCESSION NR: AT4049775

process and its developed model has shown that they are in good agreement. The model developed did not take into account the energy relationships between the print-on and effective exposures, i.e., between the number of photons incident on the layer and the number of photons captured by the microcrystals in the layer. "The author expresses his gratitude to K. V. Vendrovskiy and L. B. Levitin for their useful comments and advice offered after reading the manuscript and evaluating the results." Orig. art. has: 7 figures and 71 formulas.

ASSOCIATION: none

SUBMITTED: 11Mar61 ENCL: 00 SUB CODE: DP, ES

NO REF SOV: 009 OTHER: 021

Card 3/2

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

L 24896-65 EED(b)-3/EWG(v)/EWT(1)/EEC(t)/T Pe-5/Pae-2 IJP(c) GW

ACCESSION NR: AT5003706 S/2945/64/000/017/0112/0114

83
82
B+1

AUTHOR: Ayngorn, M. A.

TITLE: Optimum methods of photographing faint objects

SOURCE: AN SSSR. Institut problem peredachi informatsii. Problemy peredachi informatsii, no. 17, 1964. Printsipy postroyeniya setey i sistem upravleniya (Principles of network construction and control systems), 112-114

TOPIC TAGS: photography, optimum exposure, probability model, information measurement, electronic telescopy, astronomical photography, spectrography

ABSTRACT: Two particular problems of finding [illegible] photographic exposure conditions are considered: 1) It is possible to take a single photograph and obtain a single negative. The exposure may be varied within known limits. It is required to find the exposure for which the signal-to-noise ratio is maximum; 2) It is possible to take several photos obtaining N negatives of the same object within the limits of some maximum given exposure H_{max}. It is required to find the optimum number N for which it is necessary to reduce H_{max} in order to obtain maximum s/n over the entire image. A photographic system model previously developed by the

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L 24886-65
ACCESSION NR: AT5001706

author is used and the characteristic curve of the model is approximated using three functions: 1) constant for the region of fog; 2) quadratic function for the region of underexposure; 3) linear function for the region of reproduction. It is concluded that optimum methods may have practical significance in the photography of faint stars against a relatively bright background and for the detection of faint spectral lines in spectrography.

ASSOCIATION: Institut problem peredachi informatsii AN SSSR (Information transfer problems institute AN SSSR)

SUBMITTED: 00 ENCL: 00 SUB CODE: AA, ES

NO REF SOV: 004 OTHER: 003

Card 2/2

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

L 39675-65

ACCESSION NR: AP5008684 /0077/65/010/002/0131/0143

AUTHOR: Aynjorn, M. A.

TITLE: Possibilities of improving the signal-to-noise ratio in photographic images

SOURCE: Zhurnal nauchoy i prikladnoy fotografii i kinematografii, v. 10, no. 2, 1965, 131-143

TOPIC TAGS: photography, photographic image, photographic image quality, photographic signal noise ratio

ABSTRACT: Certain techniques of improving the signal-to-noise ratio of photographic images are described. Particular attention is given to the "projection" method, which consists in printing several negatives of an object successively on the same positive material. The main requirement in this method is exact spatial coincidence of the successive exposures. This is achieved by superposing a sharp reference frame on the negative and the positive just before each exposure. Essentially, this method is a technique of integrating the transparencies of the negatives concerned. The method is analyzed

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L 39675-65
ACCESSION NR: AP5008664

for the case of real photographic materials, for the integration of fractional signals, and for the resulting positive images. The signal-to-noise ratio in the first two cases does not depend on the characteristics of the negatives. In the third case, the ratio is not affected by the process of transfer of low-contrast images from the negative to the positive, except for the effect of aberration of the lens used. The results of the analysis are experimentally verified. The experimental arrangement consisted of three main parts: the container or "camera," the mechanism for superposing the negatives, and an instrument for measuring photographic noise. A Zenit-S 35-mm camera with an Industar-50 lens of 1:3.5 power was used within the container for making negatives from the translucent test standard. The contrast of the test standard was varied by changing the light intensity behind and in front of the standard. A PS-18 spectro-projector (magnification, 20; resolving power, 0.015 mm; focal length, 27 mm; relative aperture of the lens, 1:4.5) was used for superposing the negatives. The spectroprojector was modified to improve the adjustment of the object table, and a mechanism for positioning the coordinate table was added to the screen. An exposure meter was attached to the light source. An NIKFI installation comprising an

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L 39675-65
ACCESSION NR: AP5008684

MF-4 microphotometer and a V3-4 millivoltmeter was used for measuring the noise level on the basis of the output voltage of a photomultiplier tube. The scanning aperture was 200 μ; relative speed was 50 mm/min. The results of measurements showed fair agreement between the analytical and experimental values of the signal-to-noise ratio as a function of exposure. The maximum of the signal-to-noise ratio coincided with exposures corresponding to the end of the "underexposure" section of the characteristic curve of the photographic material. A noticeable correlation exists between the "quality" of a low-contrast photograph and the signal-to-noise ratio, so that this ratio can serve, in the first approximation, as a basis for determining a quality criterion for low-contrast photographic images. Analysis of a series of photographs by the method of integrating fractional signals showed that quality improved monotonically with the number of superposed integrated negatives or with increased initial exposure. Orig. art. has: 6 figures and 19 formulas. [PP]

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

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ACCESSION NR: AP5008684

ASSOCIATION: Institut problem peredachi informatsii AN SSSR (Institute for Problems of Communication, AN SSSR)

SUBMITTED: 12Aug64 ENCL: 00 SUB CODE: ES

NO REF SOV: 007 OTHER: 001 ATD PRESS: 3229

Card 4/4

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

PIGAREV, N.V.; AYNGORN, S.M.; SOROKIN, M.A., obshchiy red.; PASYNKOV, B., red.; CHEPUSHTANOVA, G., tekhn.red.

[Economy of the Altai Territory; statistics] Narodnoe khoziaistvo Altaiskogo kraia; statisticheskii sbornik. Barnaul, Altaiskoe knizhnoe izd-vo, 1958. 298 p. (MIRA 12:10)

1. Altayskiy kray. Statisticheskoye upravleniye. 2. Zamestitel' nachal'nika Statisticheskogo upravleniya Altayskogo kraya (for Pigarev). 3. Nachal'nik avodnogo sektora Statisticheskogo upravleniya Altayskogo kraya (for Ayngorn). 4. Nachal'nik Statisticheskogo upravleniya Altayskogo kraya (for Sorokin).
(Altai Territory--Statistics)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

ACCESSION NR: AP4043039 S/0077/64/009/004/0289/0296

AUTHOR: Ayngorn, M. A.

TITLE: The possibility of improving the "signal/noise" ratio on photographic prints. 1. Theoretical basis of fractional signal accumulation method

SOURCE: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, v. 9, no. 4, 1964, 289-296

TOPIC TAGS: signal noise ratio, photographic film, light energy, photography, camera, photofraphic noise, integral transform

ABSTRACT: The possibility of improving "signal/noise" ratio on photographic prints by using the fractional signal accumulation technique was investigated theoretically. The method consists basically of dividing the spatial distribution of light energy denoted by the exposure $B(x,y)t$ into N identical optical prints of type $B(x,y)t/N$. This gives rise to N optical prints acting on N distinct layers in the camera. The model for the photographic system used in the analysis is given schematically in Fig. 1 on the Enclosure. $H_1(x,y)$ is the printed-on exposure, A_2- linear inertial transformation, $H_2(x,y)$ is the "effective exposure"

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ACCESSION NR: AP4043039

signal and is related to H_1 through the integral transformation

$$H_2(x, y) = k \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \psi(x-u,\ y-w) H_1(x,\ y)\, du\, dw,$$

where ψ - spread function. The mean density $\bar{D}$ is then functionally related to the effective exposure H_2. This leads to a signal-to-noise ratio expression of the form

$$\left[\frac{\text{signal}}{\text{noise}}\right]^{0} = \frac{\Delta \bar{D}_c}{\sqrt{\sigma_D^2}} = \frac{\frac{d}{dH_2} f_1(\lg H_{1\phi}) K H_{1\phi}}{\sqrt{k_1 f_1(\lg H_{1\phi})}}$$

A graphic plot of this equation shows a maximum for the ratio at H_1 corresponding to the end of the underexposed region. Application of this same analysis to the fractional accumulation of signals method described above yields the expression

$$\frac{\text{signal}}{\text{noise}} = \frac{\frac{d}{dH_2} \cdot f_1\left(\lg \frac{H_{1\phi}}{N}\right) \Delta H_{1\phi}}{\sqrt{N} \cdot \sqrt{k_1 f_1\left(\lg \frac{H_{1\phi}}{N}\right)}}.$$

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This result shows that N-fold increase in the signal causes a corresponding $\sqrt{N}$-fold increase in photographic noise for an average of N negatives, with a net gain in signal of $\sqrt{N}$. "The author expresses his deep gratitude to A. A. Kharkevich for his valuable advice in this work." Orig. art. has: 7 figures and 28 equations.

ASSOCIATION: Institut problem peredachi informatsii Akademii nauk SSSR (Institute of Problem Transfer Information, Academy of Sciences, SSSR)

SUBMITTED: 10Nov63 ENCL: 01

SUB CODE: OP,ES NO REF SOV: 004 OTHER: 005

Card 3/4

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

ACCESSION NR: AP4043039 ENCLOSURE: 01

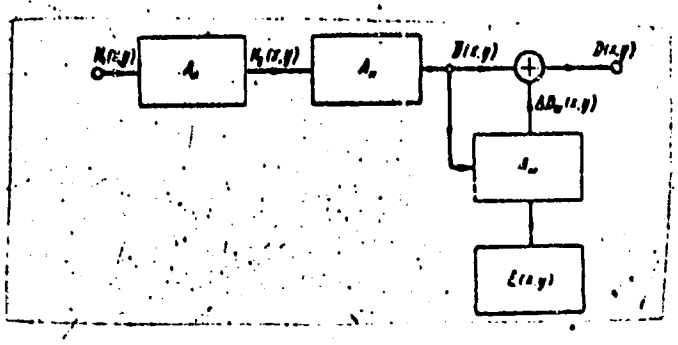

Fig. 1. Schematic of the model of the photographic system.

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KAZAKOV, V.Ye.; AYNIKEYEV, R.S.

Effect of various tillage practices on the freezing and thawing of soils in North Kazakhstan Province. Pochvovedenie no. 2:69-74 F '61. (MIRA 14:2)

1. Kazakhskiy gosudarstvennyy sel'skokhozyaystvennyy institut.
(North Kazakhstan Province--Soil temperature)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

32017-65 EWT(m)/EPF(c)/EWP(t)/T/EWP(j)/EPR/EWP(b) Pc-4/Pr-4/Ps-4 IJP(c)/
RL JD/WW/JO/RM
ACCESSION NR: AP5006449 S/0051/65/018/003/0532/0533

AUTHOR: Aynitsinov, Kh. A.; Lebedev, O. L.; Michurina, A. V.

TITLE: Luminescence of some europium complexes with fluorinated β-diketones in a polyacrylate matrix

SOURCE: Optika i spektroskopiya, v. 18, no. 3, 1965, 532-533

TOPIC TAGS: rare earth chelate, europium chelate, fluorinated diketone complex, polyacrylate matrix, luminescence spectrum, luminescence quantum yield, oscillation threshold

ABSTRACT: Luminescence spectra, lifetime, and quantum yield of luminescence of two europium chelates have been studied in connection with the stimulated emission recently observed in europium benzoylacetonate and europium thenoyltrifluoroacetonate. The samples of europium tris[1-(2-thenoyl)-3,3,3-trifluoroacetonate] (EuT_3) and europium tris(1-benzoyl-3,3,3-trifluoroacetonate) ($EuPh_3$) were prepared both in the polycrystalline state and dissolved in ethanol or in an organic matrix, either poly(methyl methacrylate) or methacrylamide and n-butyl methacrylate copolymer. The absorption spectra of EuT_3 extended over

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ACCESSION NR: AP5006445

the entire ultraviolet range and presented two large peaks. Luminescence spectra at 77K of both EuT_3 and $EuPh_3$ displayed electronic transitions from the $^5D_0$ and $^5D_1$ higher energy to lower energy levels. The effect of the environment studied on the resolution and position of the peaks was noted. The $^5D_0-^7F_2$ transition was the most energetic (80% of the total emission). Relative intensity and half-width of spectral lines of the $^5D_0-^7F_2$ transition in the solutions were redistributed in respect to those in the crystal. In europium chelates with fluorinated diketones, the quantum yield at 77K was about the same as in europium benzoylacetonate, and at room temperature it was higher than in the latter; the lifetime of the $^5D_0$ level at 77K was longer than in europium benzoylacetonate. The oscillation threshold calculated for a four-level system indicated the possibility of oscillation on $^5D_0-^7F_2$ transition in Eu complexes with fluorinated diketones. Orig. art. has: 2 figures and 1 table. [JK]

ASSOCIATION: none

SUBMITTED: 04May64 ENCL: 00 SUB CODE: GP,OC

NO REF SOV: 003 OTHER: 007 ATD PRESS: 3199

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNOLA, L. [Ainola, L.]

Nonlinear theory of Timoshenko type elastic shells. Izv. AN Est. SSR. Ser. fiz.-mat. i tekh. nauk 14 no.3:337-344 '65. (MIRA 18:11)

1. Institut kibernetiki AN Estonskoy SSR.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNOLA, L. Ya., Cand Phys-Math Sci -- (diss) "Variation problems in the nonlinear theory of elastic shells." Tallin, 1957. 7 pp (Acad Sci Estonian SSR, Department of Tech and Phys-Math Sci), 120 copies. Bibliography: p 7 (12 titles) (KL, 2-58, 110)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AINOLA, L. J.

O vozmozhnostiakh formulirovki variatsionnoi zadachi v nelineinoi teorii uprugikh obolochek. Tallin, Izd-vo Tallinskogo Politekhnicheskogo Instituta, 1957. 30 p. (Tallinn. Polutehniline Instituut. Toimetised. Trudy. Seriia A, no. 104)

Estonia

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 12, Dec. 1959
Uncl.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNOLA, L.Ya. (Tallin)

Variational problems in the nonlinear theory of elastic shells.
Prikl.mat. i mekh. 21 no.3:399-405 My-Je '57. (MIRA 10:10)
(Calculus of variations)
(Elastic plates and shells)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

SOV/124-58-7-7872

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 7, p 81 (USSR)

AUTHOR: Aynola, L.Ya.

TITLE: On the Possible Formulation of a Variational Problem in the Nonlinear Theory of Elastic Shells (O vozmozhnostyakh formulirovki variatsionnoy zadachi v nelineynoy teorii uprugikh obolochek)

PERIODICAL: Tr. Tallinsk. politekhn. in-ta, 1957, Vol A, Nr 104, 31 pages, ill.

ABSTRACT: Bibliographic entry

1. Elastic shells--Theory

Card 1/1

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNOLA, L. [Ainola, L.], kand.fiz.-matem.nauk

A variational method for approximate solution of partial differential equations. Eesti tead. akad tehn fuus 11 no.3:172-177 '62.

1. Academy of Sciences of the Estonian S.S.R., Institute of Cybernetics.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNOLA, L. [Ainola, L.], kand.fiz.-matem.nauk

Castigliano's variational principle in the dynamics of the nonlinear theory of elasticity. Eesti tead akad tehn fuus 10 no.1:22-27 '61.

1. Tallinn Polytechnical Institute.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

41473
S/023/62/011/003/001/002
D237/D308

16.1500

AUTHOR: Arnola, L., Candidate of Physical and Mathematical Sciences

TITLE: Approximate solution of partial differential equations by a variational method

PERIODICAL: Akademiya nauk Estonskoy SSR. Izvestiya, v. 11, no. 3, 1962, 172-177

TEXT: The method proposed by the author differs from the variational methods of Ritz and Kantorovicz by simultaneous variation in two directions. The solution is of the type

$$u(x, y) = \sum_{i=1}^{n} f_i(x)\, g_i(y) . \qquad (1.3)$$

Application of variational methods results in two systems of ordinary differential equations, which are interdependent, namely, the

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

L 12395-63 EWP(r)/EWT(m)/BDS AFFTC EM S/023/63/000/001/003/004

52
51

AUTHOR: Aynola, L. Candidate of Physicomathematical Sciences

TITLE: Theories of elastic plates for dynamic problems

PERIODICAL: Akademiya nauk Estonskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh i tekhnicheskikh nauk, no. 1, 1963, 31-37

TEXT: Some correlations of existent plate theories are given. A generalization of plate theories of the sixth order is developed from the variational principle of the dynamics of the three-dimensional theory of elasticity and by using approximation, for which equations are given, general form equations of plates are obtained. Equations for antisymmetric and symmetric problems are given. The case of approximation is analyzed in the form of a particular solution of the linear theory of elasticity for antisymmetric and symmetric circumstances. In case the displacements and stresses are approximated by a particular solution corresponding to

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

L 12395-63

Theories of elastic plates... S/023/63/000/001/003/004

propagation of the elementary waves of infinite wavelength by the first mode of propagation, different equations are obtained. These equations differ from the known equations of plates by the values of the coefficients. If the coefficient k^2 is 5/6, then for antisymmetric problems the plate equations coincide with Timoshenko type equations. For symmetric problems, the equations differ from the corresponding equations of Kane-Mindlin because there is a 7/10 factor before the operator. There are 8 references, 5 of which are in English. The more important English language references are: R. D. Mindlin, Influence of rotary inertia and shear on flexural motion of isotropic elastic plates, J.Appl. Mech., 18, 1, 1951; T.R. Kane, R.D. Mindlin, High-frequency extensional vibrations of plates, J. Appl. Mech. 23, 2, 1956.

ASSOCIATION: Institut Kibernetiki Akademii nauk Estonskoy SSR (Institute of Cybernetics, Academy of Sciences of EstSSR)

SUBMITTED: July 12, 1962

Card 2/2

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AINOLA, L., kandidat fiziko-matematicheskikh nauk

On Castigliano's variational principle in the theory of dynamics of finite elastic deformations. In Russian. Eesti tead akad tehn fens 10 no.1:22-27 '61. (EEAI 10:7)

1. Tallinskiy politekhnicheskiy institut.
(Elasticity) (Deformations (Mechanics))

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

L 15585-63 EWP(r)/EWT(m)/BDS AFFTC/APGC EM

ACCESSION NR: AP3000717 S/0258/63/003/002/0312/0321

AUTHOR: Aynola, L. Ya. (Tallin) 52

TITLE: On elastic plate vibration

SOURCE: Inzhenernyy zhurnal, v. 3, no. 2, 1963, 312-321

TOPIC TAGS: variation method, energy method, fixed boundary, stretched plate

ABSTRACT: The fundamental vibration mode of a plate with fixed boundaries was analysed. The plate had a rectangular surface and a finite thickness. The method is an approximation technique utilizing variation of parameters (analogous to the Galerkin method), reducing the partial differential equation into an infinite set of algebraic equations. The fundamental frequency is obtained using the first approximation for symmetric and asymmetric vibrations of the plate relative to the x and y coordinations. It is shown that this approximation technique is the generalized form of the variational method due to Ritz and the asymptotic method used by V. V. Bolotin. The analysis is then extended to the case of a stretched plate with forces acting along the x and y axes. Orig. art. has: 62 equations and 1 table.

Card 1/2

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNOLA, L. [Ainola, L.], kand. fiz.-matemat. nauk

Models for calculating elastic plates for dynamic problems [with summary in English]. Izv. AN Est. SSR, Ser. fiz.-mat. i tekh. nauk 12 no.1:31-37 '63. (MIRA 16:5)

1. Academy of Sciences of the Estonian S.S.R., Institute of Cybernetics.
(Elastic plates and shells) (Elastic solids—Models)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

L 3391-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(k)/EWA(h)/ETC(m) WW/EM

ACCESSION NR: AP5024304 UR/0023/65/000/003/0337/0344

37
35
B

AUTHOR: Ainola, L. (Aynola, L.)

TITLE: Nonlinear Timoshenko type theory of elastic shells 26

SOURCE: AN EstSSR. Izvestiya. Seriya fiziko-matematicheskikh i tekhnicheskikh nauk, no. 3, 1965, 337-344

TOPIC TAGS: nonlinear mechanics, shell theory, Hamilton equation, variational calculus 26

ABSTRACT: Timoshenko-type equations of motion for geometrically nonlinear shell theory are discussed using the generalized Hamilton's variational principle. The generalized three-dimensional variational principle is given by

$$\delta \int_{t_1}^{t_2} \left\{ \int_V \left(\frac{1}{2} E_{iklm} \sigma^{ik} \sigma^{lm} - \sigma^{ik} \gamma_{ik} + \frac{1}{2} \rho \frac{\partial u_i}{\partial t} \frac{\partial u^i}{\partial t} \right) dV + \int_{S_1} P^i u_i dS_1 \right\} dt = 0.$$

and then simplified to a two-dimensional case for displacements and stresses

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

L 3391-66
ACCESSION NR: AP5024304

with the following two approximations:

$$u_\alpha = v_\alpha(x^1, x^2, t) + x^3 \varphi_\alpha(x^1, x^2, t), \qquad u_3 = w(x^1, x^2, t) + x^3 \psi(x^1, x^2, t).$$

and

$$\sigma^{\alpha 3} = \frac{1}{h} T^{\alpha\beta}(x^1, x^2, t) + \frac{12 x^3}{h^3} M^{\alpha 3}(x^1, x^2, t)$$

$$\sigma^{\alpha 3} = \frac{2}{h} N^\alpha(x^1, x^2, t) f_{(\alpha)}(x^3), \quad \sigma^{33} = \frac{1}{h} R(x^1, x^2, t) f_{(3)}(x^3),$$

where $f_{(i)}$ is given by the functions

$$f_{(i)}(-x^3) = f_{(i)}(x^3), \quad \frac{1}{h}\int_{-h/2}^{h/2} f_{(i)} dx^3 = 1, \quad \frac{1}{h}\int_{-h/2}^{h/2} f_{(i)}^2 dx^3 = k_{(i)}.$$

The Timoshenko-type equations consist of three equations of motion and four elasticity relations. When linearized, these equations take the form

$$\nabla_\alpha T^{\alpha\beta} - b_\alpha^\beta N^\alpha - \varrho h \ddot{v}^\beta + p^\beta = 0$$

and

$$T^{\alpha\beta} = \frac{1}{2} B E^{\alpha\beta\gamma\delta}(e_{\gamma\delta} + e_{\delta\gamma})$$

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APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

L 3391-66

ACCESSION NR: AP5024304 2

From two possible shell displacements, a set of Timoshenko type dynamic stability equations is also obtained which in tensor notation takes the form

$$\nabla_\alpha T_1^{\alpha\beta} - b_\alpha^\beta N_1^\alpha + \nabla_\gamma\left(T_0^{\alpha\gamma} e_\alpha^{1\beta}\right) + \nabla_\gamma\left(e_\alpha^{0\beta} T_1^{\alpha\beta}\right) - b_\gamma^\beta T_0^{\alpha\gamma} \omega_\alpha^1 -$$
$$- b_\gamma^\beta \omega_\alpha^0 T_1^{\alpha\gamma} + \nabla_\alpha\left(M_\alpha^{\alpha\gamma} \nabla_\gamma \varphi_1^\beta\right) + \nabla_\alpha\left(\nabla_\gamma \varphi_0^\beta M_1^{\alpha\gamma}\right) - b_\gamma^\beta b_\alpha^\delta M_0^{\alpha\gamma} \varphi_\delta -$$
$$- b_\gamma^\beta b_\alpha^\delta \varphi_\delta^0 M_1^{\alpha\gamma} + \nabla_\alpha\left(N_0^\alpha \varphi_1^\beta\right) + \nabla_\alpha\left(\varphi_0^\beta N_1^\alpha\right) - \rho h \ddot{v}_1^\beta + \Delta p_0^\beta + p_1^\beta = 0 .$$

Orig. art. has: 56 equations.

ASSOCIATION: Institut kibernetiki, Akademii nauk, Estonskoy SSR (Institute of Cybernetics, Academy of Sciences, Estonian SSR)

SUBMITTED: 15Mar65 ENCL: 00 SUB CODE: AS, MA

NO REF SOV: 001 OTHER: 004

Card 3/3

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNOLA, [illegible] [Ainola, L.] (Tallin)

[illegible]ometrically nonlinear theory of the dynamics of elastic [illegible]plates. Prikl. mekh. 1 no.8:7-16 '65. (MIRA 18:9)

1. Institut kibernetiki AN Estonskoy SSR.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

1. AYNOV, P. I., Eng.

2. USSR (600)

4. Electricity in Mi[illegible]

7. Temporary electric su[illegible]ons for mines.
Ugol' 27 No. 10, 1952.

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

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

TURKEL'TAUB, N.M.; AYNSHTEYN, S.A.; SYAVTSILLO, S.V.

Chromatographic method of determining impurities in readily hydrolyzable and reactive substances. Zav.lab. 28 no.2:141-144 '62. (MIRA 15:3)

(Chromatographic analysis)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

TURKEL'TAUB, N.M.; SHEMYATENKOVA, V.T.; AYNSHTEYN, S.A.; SYAVTSILLO, S.V.

Determination of some organic impurities in raw materials and intermediate products of the synthesis of organosilicon compounds. Trudy Kom.anal.khim. 13:284-289 '63. (MIRA 16:5)
(Silicon organic compounds)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNSHTEYN, S.A.; ANVAY[illegible], B.I.; TURKEL'TAUB, N.F.

Use of gas-liquid chromatography for separating some inorganic gases. Zav. lab. 30 no.6:669-671 '64 (MIRA 17:8)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

SOV/64-58-6-10/15

AUTHORS: Gel'perin, N. I., Doctor of Technical Sciences, Professor, Kruglikov, V. Ya., Candidate of Technical Sciences, Aynshteyn, V. G.

TITLE: Heat Exchange Between a Pseudoliquefied Layer and the Surface of a Single Tube With Lengthwise and Transverse Circulation of Gases (Teploobmen mezhdu psevdoozhizhennym sloyem i poverkhnost'yu odinochnoy truby pri yeye prodol'nom i poperechnom obtekanii gazami)

PERIODICAL: Khimicheskaya promyshlennost', 1958, Nr 6, pp 358-363 (USSR)

ABSTRACT: In spite of the fact that the process referred to in the title is widely used in industry the laws governing heat exchange between heating surfaces and the pseudoliquefied layer of the solid has not been sufficiently investigated. The data to be found in the references about the influence of the geometrical parameter of the layer and the surface of heat exchange in the case of a steady gas circumcirculation are contradictory. The present paper describes investigations aimed at clarifying this question. It contains a sketch of the test plant and a description of the cylindrical re-

Card 1/2

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

SOV/64-58-6-10/15

Heat Exchange Between a Pseudoliquefied Layer and the Surface of a Single Tube With a Lengthwise and Transverse Circulation of Gases

actor and heating element. Temperature measurements were carried out with a millivoltmeter PPTV -1. Sand grains of different sizes were used in the tests. Among the conclusions drawn from the results there are some which are in accordance with the statements made by A. A. Voytekhov, A. P. Zinov'yeva and D. I. Orochko (Ref 5). Furthermore, data given by A. N. Planovskiy and P. I. Nikolayev (Ref 9) are referred to. The results of experiments with a transverse circumcirculation of gases are in accordance with data given by Hoerden (Ref 19) and Leva (Ref 20), but contradict those furnished by Dow (Ref 21) and Brötz (Ref 22). According to Wamsley (Ref 23) and Walton (Ref 24) the heat emission coefficient reaches a maximum in the base of the pseudoliquefied layer. The dependence of the heat emission coefficient on the location of the surface of heat exchange in the boiling layer was already pointed out in the paper by Wicke (Ref 27), but no quantitative data were then given. Data furnished by Mickley (Ref 28) and Reed (Ref 29) are also given. There are 8 figures, 4 tables, and 30 references, 12 of which are Soviet.

Card 2/2

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNSHTEYN, V. G.: Master Tech Sci (diss) -- "Investigation of the process of [redacted] heat exchange between a pseudoliquefied layer and a single tube placed in the layer". Moscow, 1959. 14 pp (Min Higher Educ USSR, Moscow Inst of Fine Chem Technology im M. V. Lomonosov), 170 copies (KL, No 7, 1959, 124)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I., doktor tekhn.nauk, prof.; AYNSHTEYN, V.G., kand.tekhn.nauk; ZAYKOVSKIY, A.V.

Apparatus with a fluidized (boiling) bed of free-flowing material in a field of centrifugal forces. Khim. mash. no. 3:2-4 My-Je '60. (MIRA 14:5)

(Fluidization)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I.; AYNSHTEYN, V.G.; GEL'PERIN, E.N.; L'VOVA, S.D.

Hydrodynamic characteristics of the fluidization of granular materials in conical-cylindrical units. Khim.i tekh.topl.i masel 5, no.8:51-57 Ag '60. (MIRA 13:8)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova.
(Fluidization) (Granular materials)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I., doktor tekhn.nauk, prof.; AYNSHTEYN, V.G., kand.tekhn.nauk; TIMOKHOVA, L.P.

Hydrodynamic characteristics of the fluidization of granular materials in conical apparatus. Khim. mash. no.4:12-15 Jl-Ag '61. (MIRA 14:8)

(Fluidization)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I.; AYNSHTEYN, V.G.; KLYUYEVA, L.M.

Determination of the specific gravity of ion exchange resins in a hydrated state. Zav.lab. 27 no.11:1375-1376 '61. (MIRA 14:10)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova.

(Ion exchange resins)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

BERANEK, Yaroslav, inzh.; SOKOL, Drahomir [Sokol, Drahomir], inzh.; AYNSHTEYN, V.G., kand. tekhn. nauk, [translator]; GEL'PERIN, N.I., doktor tekhn. nauk, prof., red.; TITSKAYA, B.F., ved. red.; POLOSINA, A.S., tekhn. red.

[Techniques of fluidization]Tekhnika psevdoozhizheniia. Pod red. N.I.Gel'perina. Moskva, Gostoptekhizdat, 1962. 159 p. Translated from the Czech. (MIRA 15:12)

(Fluidization)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I.; AYNSHTEYN, V.G.

Effect of the size and specific gravity of solid particles on their coefficient of heat transfer toward gas in a fluidized bed. Khim. i tekh.topl.i masel 7 no.3:6-9 Mr '62. (MIRA 15:2)

1. Moskovskiy institut tonkoy khimicheskoy tekhnol[redacted]im. M.V. Lomonosova.

(Fluidization)
([redacted]—Transmission)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I., doktor tekhn.nauk; KRUGLIKOV, V.Ya., kand.tekhn.nauk; AYNSHTEYN, V.G., kand.tekhn.nauk

Effect of the geometrical characteristics of a fluidized bed and of a surface of heat transmission on heat transfer between the bed and the surface placed into the bed. Nauch.zap. Ukrniiproekta no.8:23-33 '62. (MIRA 16:1)
(Fluidization) (Heat--Transmission)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I., doktor tekhn.nauk; KRUGLIKOV, V.Ya., kand.tekhn.nauk; AYNSHTEYN, V.G., kand.tekhn.nauk

Heat transfer between the fluidized bed and a single tube placed into the bed. Nauch.zap.Ukrniiproekta no.8:34-47 '62. (MIRA 16:1)

(Fluidization) (Heat—Transmission)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I.; AYNSHTEYN, V.G.

Thermal design of a pneumatic conveying tube. Khim.prom. no.10:753-757 O '62. (MIRA 15:12)
(Fluidization—Equipment and supplies)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I.; AYNSHTEYN, V.G.; ROMANOVA, N.A.

Hydraulics and heat transfer in a fluidized bed with an upright tube bundle. Khim.prom. no.11:781-738 N '62. (MIRA 16:2)
(Fluidization--Equipment and supplies)
(Heat--Transmission)

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I., doktor tekhn.nauk, prof.; AINSHTEYN, V.G., kand.tekhn.nauk; KVASHA, V.B., kand.tekhn.nauk; KOGAN, A.S., inzh.; VIL'NITS, S.A., kand. tekhn.nauk

Apparatus for classifying free-flowing materials in a fluidized bed. Khim.mashinostr. no.6:11-16 N-D '63. (MIRA 17:2)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I.; AYNSHTEYN, V.G.; ROMANOVA, N.A

Method of determining the hydraulic resistance of a fluidized bed. Khim. i tekh. topl. i masel 8 no.9:16-20 S '63. (MIRA 16:11)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I.; AYNSHTEYN, V.G.; ROMANOVA, N.A.

Hydraulics and heat exchange in a fluidized bed with bundles of vertical pipes. Khim.prom. no.11:829-830 '63. (MIRA 17:4)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

VAYNSHTEYN, B.P.; KRUGLIKOV, V.Ya.; RAPOPORT, I.B.; VASIL'YEVA, Z.A.; KAGAN, L.Kh.; PLOKHINSKAYA, Ye.A.; VOLYNSKIY, A.V.; MIZOVSKIY, V.V.; KLEVTSOVA, V.P.; Prinimali uchastiye: MICHAN, A.I.; KONOVAL'CHIKOV, L.D.; ~~AYNSHTEYN, V.G.;~~ KVASHA, V.B.; CHELYANOVA, D.P.; ZAYTSEVA, A.F.; ANDREYEVA, T.A.

New way to synthesize oxygen compounds from carbon monoxide and hydrogen over iron-copper catalysts. Trudy VNII NP no. 9:177-196 '63. (MIRA 17:6)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GELPERIN, N. I.; AYNSHTEYN, V. G.; ROMANOVA, N. A.

"Hydraulics and heat transfer in a fluidized bed with vertical tube bundles."

report submitted for 2nd All-Union Conf on Heat Transfer, Minsk, 4-12 May 1964.

Moscow Inst of Light Chemical Technology.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I., doktor tekhn. nauk, prof.; AYNSHTEYN, V.G., kand. tekhn. nauk; GOYKHMAN, I.D., inzh.

Investigating the fluidization of granular materials in a field of centrifugal forces. Khim. i neft. mashinostr. no.1:13-16 Jl '64. (MIRA 17:12)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I.; AYNSHTEYN, V.G.; ROMANOVA, N.A.

Effect of the height of the heat exchanger surface on the coefficient of heat transfer in the fluidized bed. Khim. prom. no.2:101-104 F '64. (MIRA 17:9)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I.; AYNSHTEYN, V.G.

Two-phase theory of fluidization. Zhur. VKHO 9 no. 3:356 '64. (MIRA 17:9)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I.; AYNSHTEYN, V.G.; GOYKHMAN, I.D.

Bounded existence of fluidized beds. Inzh. fiz. zhur. no.7:15-19 Jl '64. (MIRA 17:10)

1. Institut tonkoy khimicheskoy tekhnologii im. M.V. Lomonosova, Moskva.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, V.I., doktor tekhn. nauk; AYNSHTEYN, V.G., kand. tekhn. nauk; GOYKHMAN, I.P., inzh.

Speed of the beginning of fluidization and the expansion of a fluidized bed in the field of centrifugal forces. Khim. i neft. mashinostr. no.6:18-22 N '64. (MIRA 18:2)

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Pe-4/Pi-4 JD/WW

ACCESSION NR: AP5017239 UR/0170/64/000/007/0015/0019

AUTHOR: Gel'perin, N. I.; Aynshteyn, V. G.; Gokhman, I. D. 40 B

TITLE: Range of existence of a fluidized bed

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 7, 1964, 15-19

TOPIC TAGS: fluid mechanics

ABSTRACT: The article considers the range of existence of fluidized beds on the basis of the range of the fluidized state as a function of particle size and the limiting polydispersion number as a function of the velocity of the fluidizing agent. The results are given as ratios of dimensionless quantities. A comparison is made between the highest allowable fuidization numbers and polydispersion numbers found in earlier papers and those obtained in the present study. Orig. art. has: 10 formulas, 3 graphs.

ASSOCIATION: Institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova, Moscow (Institute of Precision Chemical Engineering)

Card 1/2 Submitted: 20 Feb 64 AP5017239

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNSHTEYN, V.A.; GEL'FERIN, N.I.

Heat exchange between fluidized bed and surface. Khim.prom. 41 no.6:416-422 Je '65. (MIRA 18:8)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I.; LEBEDEV, P.D.; NAPALKOV, G.N.; AYNSHTEYN, V.G.

Heat and mass exchange in the fluidized bed and other dispersion systems. Khim.prom. 41 no.6:428-437 Je '65. (MIRA 18:8)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

GEL'PERIN, N.I.; AYNSHTEYN, V.G.

Calculation of the expansion of a layer in homogeneous fluidization. Zhur.VKHO 10 no.4:475-477 '65. (MIRA 18:11)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V.Lomonosova.

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNSON, Kh. Kh., Cand Vet Sci -- (diss) "Characteristics of the protein composition of the lymph glands of large cattle." Tartu, 1960. 12 pp; (Estonian Agricultural Academy of the Ministry of Agriculture Estonian SSR); 250 copies; free; (KL, 27-60, 158)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNUTDINOV, M.S.

KOSMACHEVSKIY, V.K.; AYNUTDINOV, M.S.

Making large-size plastic scintillators. Prib.i tekh.eksp.no.3:49-51 N-D '56. (MLRA 10:2)
(Scintillation counters)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

Aynutdinov, M.S.

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E032/E514

246810

AUTHORS: Selektor, Ya. M., Aynutdinov, M.S. and Zombkovskiy, S.M.

TITLE: A Device for Measuring the Pressure and the Level of Hydrogen in Liquid Hydrogen Bubble Chambers 19

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No 3, pp 29-31

ABSTRACT: A description is given of an instrument which can be used to measure the pressure and sudden pressure changes in bubble chambers. The sensitive element is a capacitor. Changes in the pressure lead to changes in the capacitance, and the present paper consists essentially of a description of an electronic circuit which can be used to measure these small changes in the capacitance. The circuit is shown in Fig 1. The working frequency is 200 kc/s. The change in the capacitance is converted into a phase change and this is measured by the circuit. A 40 m cable connects the capacitative probe to the control unit. Steps are taken to compensate changes in the cable capacitance. A sensitivity of 0.5 - 10 μμF per full scale deflection can easily be obtained. The zero drift does not exceed

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

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E032/E514

A Device for Measuring the Pressure and the Level of Hydrogen in Liquid Hydrogen Bubble Chambers

1% of full scale per hour. The instrument can also be used to measure the level of liquid hydrogen and liquid nitrogen in closed metallic containers. In the latter cases use is made of the fact that there is a relatively large difference between the dielectric constant of hydrogen in the vapour and liquid states. In the circuit shown in Fig 1, the alternating voltage from the 200 kc/s oscillator $Л_5$ is applied through the cathode follower $Л_4$ to the grid of the amplifier $Л_1$. The probe unit is connected to the anode of $Л_1$ through the long high-frequency cable K_1. The phase shift at the anode of $Л_1$ is determined by the difference between the oscillator frequency and the resonant frequency of the circuit R_1, L_1, C_1, C. The carrier frequency from the oscillator and the phase-shifted oscillations from the anode of $Л_1$ are applied to the phase detector $Л_2, Л_3$, $Д_1$ and $Д_2$. The output of the phase detector can be connected either to a pointer instrument or a CRO.

Card 2/2 There is 1 figure.

SUBMITTED: May 23, 1959

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

S/120/61/000/001/009/062
E032/E114

AUTHORS: Aynutdinov, M.S., Zombkovskiy, S.M., Nikitin, S.Ya., and Selektor, Ya.M.

TITLE: A 25 cm Diameter Liquid Hydrogen Bubble Chamber

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No.1, pp.35-39

TEXT: A description is given of a liquid hydrogen bubble chamber having a working diameter of 25 cm and a depth of 10 cm. The chamber is operated in a constant magnetic field of 14000 oe (5% uniformity over working region). The expansion is carried out by means of stainless steel bellows, 10 cm in diameter. About 12 litres of liquid hydrogen are necessary in order to cool the chamber from the liquid nitrogen temperature to the liquid hydrogen temperature. The time necessary to cool the chamber from room temperature down to 20 °K is about 24 hours, and under dynamic conditions (expansion after each 14 sec) the liquid hydrogen consumption is 2 to 2.5 litres/hour. The upper and lower pressure on expansion is 5.5 and 1.5 atm respectively. The corresponding temperature of the chamber and the hydrogen bath is 27 °K and 26.5 °K, respectively.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

S/120/61/000/001/009/062
E032/E114

A 25 cm Diameter Liquid Hydrogen Bubble Chamber

The bubble chamber has been used in the π-meson beam of the 7 GeV machine of the Joint Institute of Nuclear Studies, (Ob'yedinennyy institut yadernykh issledovaniy). A detailed sectional drawing of the device is given.
Acknowledgements are expressed to V.A. Beketov and A.P. Besschetniy for developing parts of the chamber and to V.T. Smolyankin and A.A. Sokolov for valuable advice.
There are 4 figures and 4 references: 1 Soviet and 3 non-Soviet.

SUBMITTED: February 5, 1960

Card 2/2

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

S/120/61/000/001/056/062
E032/E114

AUTHORS: Beketov, V.A., Selektor, Yu.M., Zombkovskiy, S.M., and Aynutdinov, M.S.

TITLE: Vacuum-Tight Glass Windows for Liquid Hydrogen Bubble Chambers

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No.1, pp.182-183

TEXT: One of the most difficult problems in the design of liquid hydrogen bubble chambers is to produce a reliable vacuum-tight union between the body of the chamber and the glass windows through which the working volume is photographed and illuminated. Existing designs (D. Parmentier Jr., A.J. Schwemin, Ref.1, and V.Z. Kolganov et al. Ref.2) are said to be either unreliable for chamber diameters in excess of 25 cm, or require replacement of the sealing elements after one or two successive working cycles. The present authors have used the design shown in the figure. The copper gasket 1 is inserted into a groove in the body of the chamber and is in contact with the teflon ring 2. In the upper part of the copper gasket there is a rectangular groove carrying a further teflon ring 3. When the arrangement is compressed by

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E032/E114

Vacuum-Tight Glass Windows for Liquid Hydrogen Bubble Chambers

the brass bolts the copper gasket is squashed and the teflon rings provide the vacuum-tight seal. In order to achieve a uniform transmission of pressure to the glass a further copper gasket 4 is placed between the glass and the flange 7. The copper gasket 1 was 3.1 mm wide and 7.5 mm high. The width and height of the teflon ring 3 were 1 and 1.8 mm respectively. Glass windows up to 40-50 cm in diameter can be produced in this way.
There are 1 figure and 2 references: 1 Soviet and 1 non-Soviet.

SUBMITTED: December 10, 1959

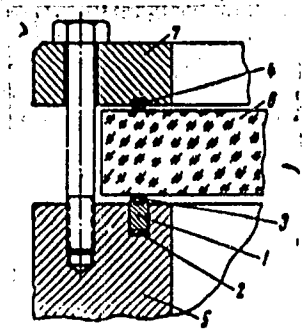
Card 2/3

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

S/120/61/000/001/056/062
E032/E114

Vacuum-Tight Glass Windows for Liquid Hydrogen Bubble Chambers



Figure

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

AYNUTDINOV, M. S.; NIKITIN, S. Ya.; SELEKTOR, Ya. M.; ZOMBKOVSKY, S. M.

"Investigation of Resonance States in π - Meson Systems."

Report presented at the Int. Conference on High Energy Physics, Geneva, 4-11 July 1962

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

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B108/B138

24.6700

AUTHORS: Aynutdinov, M. S., Zombkovskiy, S. M., Nikitin, S. Ya., Selektor, Ya. M., Grashin, A. F.

TITLE: π-π interaction in π^--p collisions at 7.2 Bev

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 5, 1962, 1413-1415

TEXT: In order to collect information on pion multiple production the authors studied 7.2-Bev π^--p collisions using a liquid hydrogen chamber in a magnetic field. The distribution of $\pi^- + p \rightarrow p + \pi^- + k\pi^0$ events according to the square of the pion total energy ω has a narrow peak at $\omega^2 \sim 30$. This is attributed to participation of spin 1 ϱ-mesons in the reaction $\pi^- + p \rightarrow p + \varrho^- \rightarrow p + \pi^- + \pi^0$. The production cross section of ϱ^--mesons is $\sim$1 mbarn. The scattering cross section $\sigma_{\pi\pi}$ for primary momenta of 2.8 Bev/c is about 300 $\pm$ 100 mbarn for ω^2 = 20-30. There are 2 figures.

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

S/056/62/042/006/014/047
B104/B102

AUTHORS: Aynutdinov, M. S., Zombkovskiy, S. M., Nikitin, S. Ya., Selektor, Ya. M.

TITLE: The elastic scattering of 7.2-Bev π^- mesons by protons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 6, 1962, 1495-1498

TEXT: The elastic scattering of the mesons was measured in a liquid-hydrogen bubble chamber (25 cm diameter) placed in a magnetic field of 13.5 koe. The chamber was exposed to a beam of external π^- mesons from the proton-synchrotron of the Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research). The meson beam was produced in an internal beryllium target, focussed by four quadrupole lenses, analyzed by the magnetic field according to the momentum, and directed to the entrance of the bubble chamber. The meson energy had a Gaussian distribution with a half-width of 0.8 Bev. From 10 to 25 mesons were recorded for each expansion. From 13,700 photographs, 1619 events of πp interactions were found, whereof 192 were identified as

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elastic scattering events. The differential cross section of the elastic $\pi^- p$ scattering was determined for angles between 4 and 28.3° in the c.m.s. (Fig. 2). The scattering amplitude was calculated for $R = 1.02 \cdot 10^{-13}$ cm, $K = 0.70 \cdot 10^{23}$ cm^{-1}, $k_1 = 0$, and $\sigma_{diff} = 4.84$ millibarn with the help of

$$f(\theta) = ik_0 \int_0^R [1 - \exp(-K + 2ik_1)\sqrt{R^2 - \rho^2})] J(k_0 \rho \sin\theta) \rho d\rho.$$

Here k_0 is the wave number of the primary pion, k_1 is the change in the real part of the wave number, and K is the absorption coefficient. $\sigma_{abs} = 31 \pm 3.1$ mb; $\sigma_{el}(\theta' \geqslant 5^\circ) = 3.90 \pm 0.54$ mb; $\sigma_{el}(\theta^\circ) = 39.2$ mb/steradian. The results can be expressed very well in terms of the optical model of a proton ($\sigma_{opt}(\theta^\circ) = 33.5$ mb/steradian). There are 2 figures.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki Akademii nauk SSSR (Institute of Theoretical and Experimental Physics of the Academy of Sciences USSR)

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"

"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

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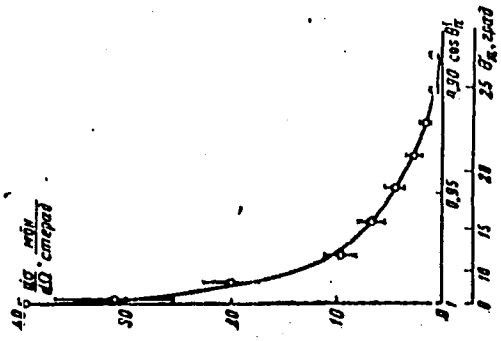
B104/B102

The elastic scattering of ...

SUBMITTED: January 30, 1962

Fig. 2. Angular dependence of the elastic scattering cross section.



Card 3/3

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"APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9

S/056/62/043/004/055/061
B104/B186

AUTHORS: Aymutdinov, M. S., Zombkovskiy, S. M., Nikitin, S. Ya., Selektor, Ya. M., Shulyachenko, V. N.

TITLE: $\pi\pi$-interaction during multiple pion production in πp-collisions

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 4(10), 1962, 1543-1546

TEXT: $\pi\pi$-interaction was studied on 7.2 Bev primary π^--mesons whose velocity distribution was Gaussian with a half width of 0.8 Bev. 13,000 photographs were taken from a 25 cm wide liquid-hydrogen bubble chamber placed in a magnetic field of 13,500 gauss. The reactions

$$\pi^- + p \rightarrow 2\pi^- + 2\pi^+ + n + k\pi^0, \quad (1)$$
$$\pi^- + p \rightarrow 3\pi^- + 3\pi^+ + n + k\pi^0, \quad (2)$$

were studied. k is the known number of π^0-mesons. The reactions

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$$\pi^- + p \rightarrow 2\pi^- + \pi^+ + p + k\pi^0, \quad (3)$$
$$\pi^- + p \rightarrow 3\pi^- + 2\pi^+ + p + k\pi^0 \quad (4)$$

were excluded by identifying the protons from their momenta and by estimating the ionization. The numbers of possible combinations ($\pi^-\pi^-$, $\pi^+\pi^+$, $\pi^+\pi^-$, $\pi^-\pi^0$) as functions of the effective masses have sharp maxima at the mass values of 0.33, 0.44, 0.58, 0.76, 0.99. Evidently, there are resonances at these mass values in the systems with two pions. It is proved that one and the same pion is not involved in two maxima. It is concluded that in systems with equal mass values, but with different isotopic spins and mechanical spins, there exist two resonance systems. This means that in the case of strong interaction there is a degeneracy with respect to the two spins. There are 2 figures and 1 table.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki Akademii nauk SSSR (Institute of Theoretical and Experimental Physics of the Academy of Sciences USSR)

SUBMITTED: June 20, 1962

APPROVED FOR RELEASE: 06/06/2000 CIA-RDP86-00513R000102710001-9"