Changes in the Properties of Chrome Coatings (cont.)

microphotographs taken with laboratory-type and metallographic microscopes. Phase contents and the magnitudes of internal stresses of CC were determined by X-ray analysis, photographing in an Ivensen-Kurdyumov camera with a 5-hour exposure and an inverse-exposure photography with rotation of specimen and filmholder and an exposure of 3 hours. It is established that a deterioration of the surface finish before chrome plating leads to a decrease in M and an increase in porosity of CC. The parent substance of the article and its heat treatment have no influence on the quality of CC. Polishing of CC produces an increase in its P and a decrease in M. It is shown that a decrease in the internal stresses on CC occurs on polishing. Considerable stresses occur on the surface layer of the metal in the zone of its contact with the abrasive, which leads to a fissuring of CC and an increase in its P. Fissuring of CC results in a release of internal stresses and a consequent decrease in M. An increase in P and decrease in M depend to a greater extent on the temperature of chrome plating, amount of the surplus removed, amount of cooling fluid, and the properties of the polishing disk and to a smaller extent on the cathode cd during chrome plating and the method of machining. It is shown that on polishing of chrome-plated machine parts the formation of polishing fissures is often observed under CC on tempered and nitrated steel articles. It is noted that with a strict

Changes in the Properties of Chrome Coatings (cont.

observance of a suitable polishing procedure it is possible to avoid the formation of such fissures. Optimal procedures for polishing of chrome plated parts are quoted.

[illegible] M

[illegible]

Card 3/3

KAMENEV, N.A.; MIKHAYLOV, A.A.

Investigating the breaking of parts due to cracks caused by the grinding of chrome-plated surfaces. Trudy Sem.po kach.poverkh. no.4:204-210 '59. (MIRA 13:6)
(Grinding and polishing)

29867

11100

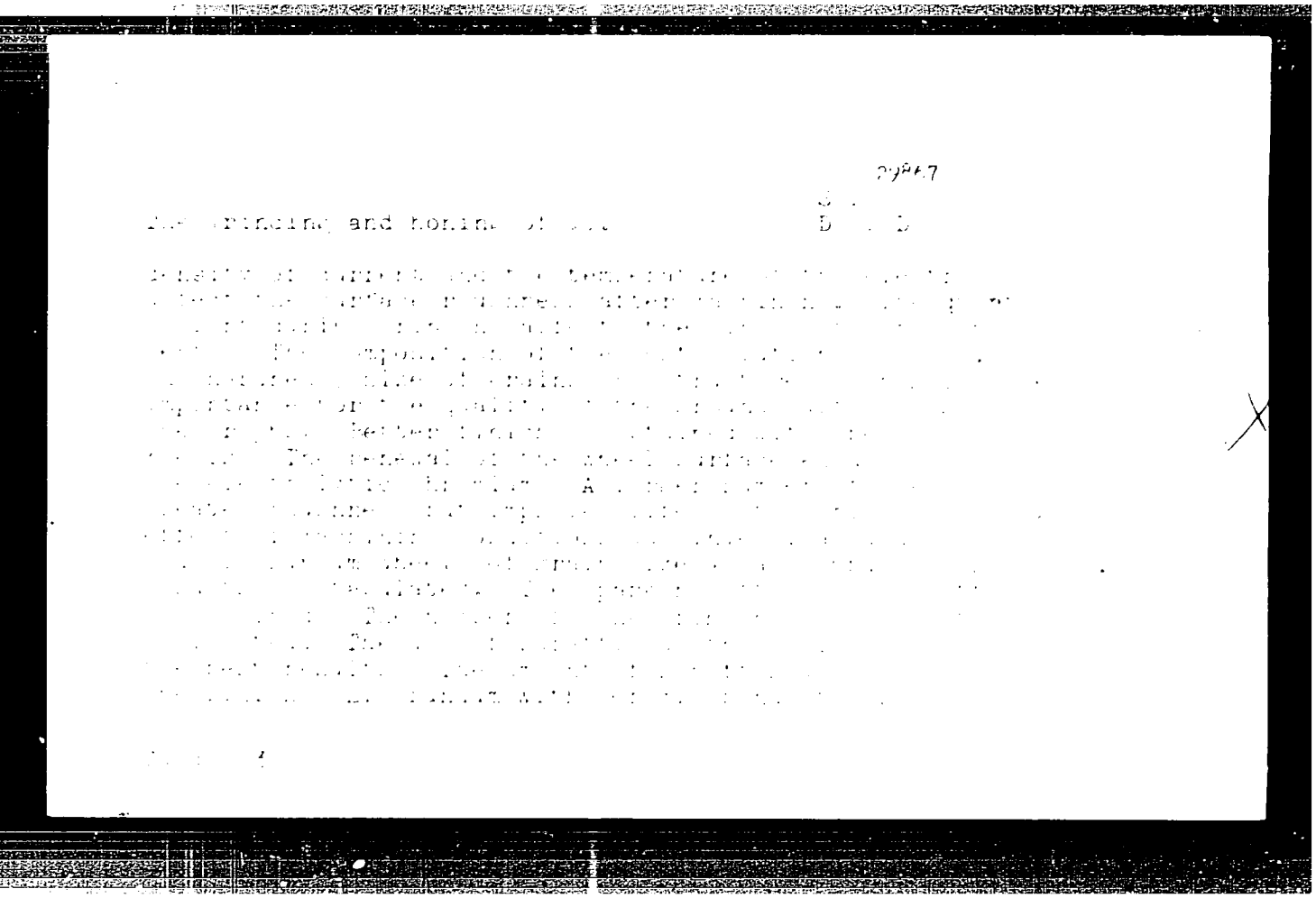
AUTHOR: [illegible], A. A. [illegible]

TITLE: The [illegible] chromium plated components

PERIODICAL: Vestnik [illegible]

TEXT: The effect of [illegible] cylinders after chromium plating [illegible] when rubber rin[gs] [illegible] the hydraulic fluid was AMГ-10 (AMG-10). [illegible] wear[ing] [illegible] carried out [illegible] to determine [illegible] speed and duration of [illegible] was measured by the [illegible] ПЧ [illegible] instrument as per ГОСТ [illegible] indicators. Preliminar[y] [illegible]

Card 1/3



The grinding and honing of ...

used for checking the effect on honing. The curves ... data as well as those concerning the importance ... noted. The material of hones was also investigated. ... honing head has no effect on finish, although the life ... is shortened when a certain speed is reached. The speed ... reciprocating motion affects the quality of the honed ... initial surface roughness determines the duration of ... operation. The examinations proved that minimum wear of ... tion components is obtained with a ratio between ... longitudinal displacement of the hone to its peripheral ... from 1/10 to 1/5. Therefore, the following ... be drawn. The finish of chromium plated components ... factors of machining except the speed of workpiece in ... the speed of head in honing. The abrasives with SM ... ness ensure best results. Grinding provides finish ... data, whereas honing allows the attainment of ... There are 1 figures.

Card 2/2

S/081/62/000/006/029/117
B171/B101

AUTHORS: Mikhaylov, A. A., Tekster, Ye. N.

TITLE: The utilization of sodium hypophosphate for the separation of thorium from cerium

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 6, 1962, 124, abstract 6D52 (Tr. Leningr. tekhnol. in-ta im. Lensoveta, no. 55, 1961, 167-169)

TEXT: The distribution of Ce between solid and liquid phases has been investigated with the help of Ce^{144}, in reactions where a 1:5 mixture of Th and Ce was precipitated from sulfuric acid and hydrochloric acid solutions by $Na_2H_2P_2O_6$, used with an excess of 150 %. Ce^{4+} was reduced to Ce^{3+} by hydrogen peroxide before and after precipitation by the hypophosphate. It has been established that, if Ce^{4+} is reduced before the addition of the precipitant, practically all Ce remains in sulfuric

Card 1/2

The utilization of sodium...

acid solution, for concentrations of H_2SO_4 ranging from 1.5 to 3.5 N, and in hydrochloric acid solution, for concentrations of HCl oetween 2.5 and 4 N. Proceeding from the knowledge of solubility of ThP_2O_6 in acids, the authors assume that practically all Th is in the solid phase. Methods have been worked out for the preparation of pure $Na_2H_2P_2O_6$ from red P.

Abstracter's note: Complete translation.

Card 2/2

S/276/63/000/002/039/052
A052/A126

AUTHOR: Mikhaylov, A.A.

TITLE: Horizontal broaching machine for internal broaching

PERIODICAL: Referativnyy zhurnal, Tekhnologiya mashinostroyeniya, no. 2, 1963, 182, abstract 2B1009 (Prom-st' Belorussii, no. 8 (51), 54, 1962)

TEXT: The 7 B520(7B520) type machine of the Minsk plant im. Kirov has an appliance which makes it possible during the operation to reduce the speed of the slide bar at the end of the working stroke, and also an appliance for removing chips from the broach. The working stroke speed is 1.5-11 m/min, the return stroke speed is 25 m/min. The possibility of using chucks from machines of other dimensions is provided for on the machine. There is 1 figure.

(Abstracter's note: Complete translation.)

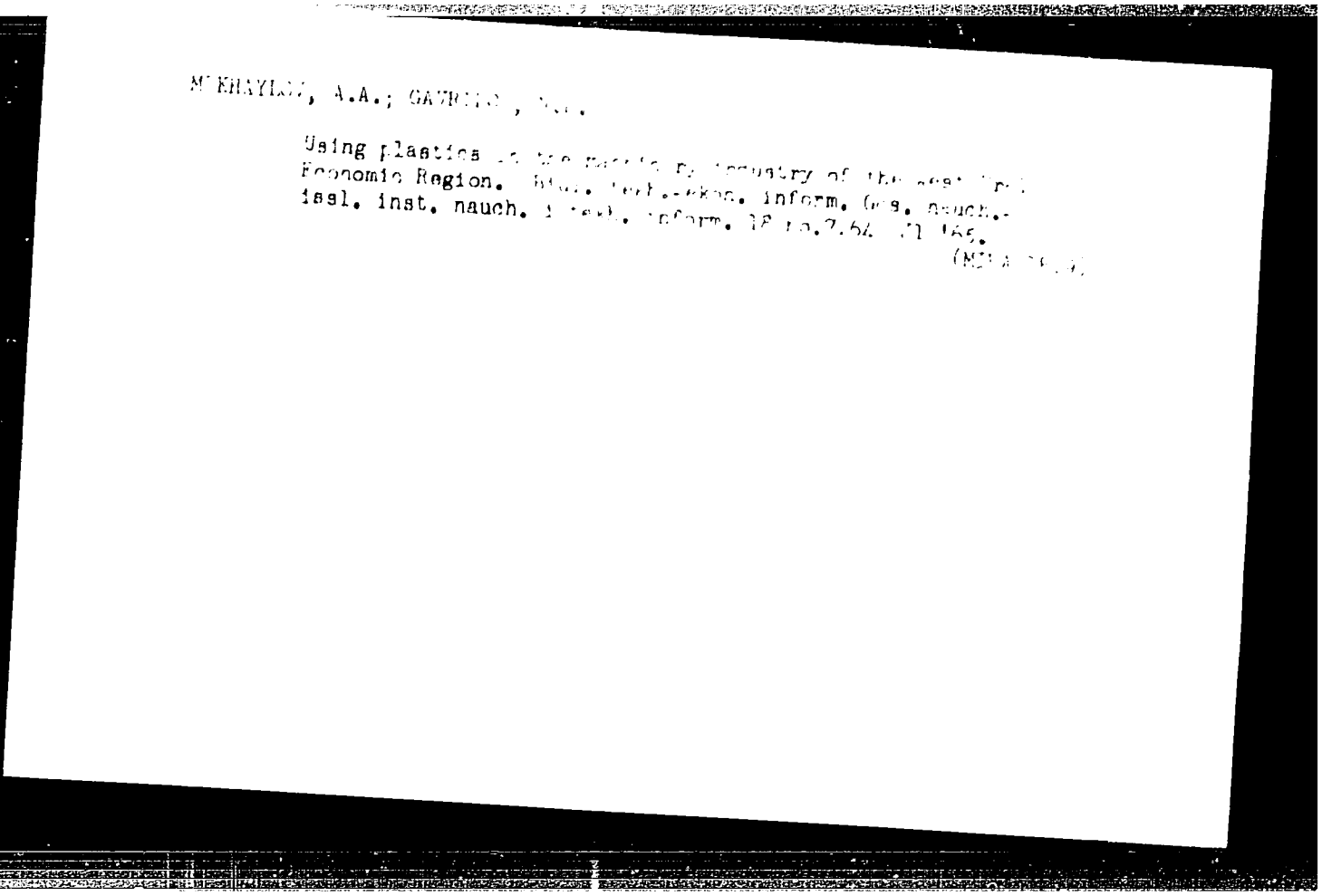
Card 1/1

GRUSHINSKIY, Nikolay Panteleymonovich; MIKHAYLOV, A.A., retsenzent; BROVAR, V.V., nauchn. red.; FROLOV, A.T., red.; LIKHACHEVA, L.V., tekhn. red.

[Theory of the figure of the earth] Teoriia figury Zemli. Moskva, Fizmatgiz, 1963. 446 p. (MIRA 16:12)
(Earth--Figure)

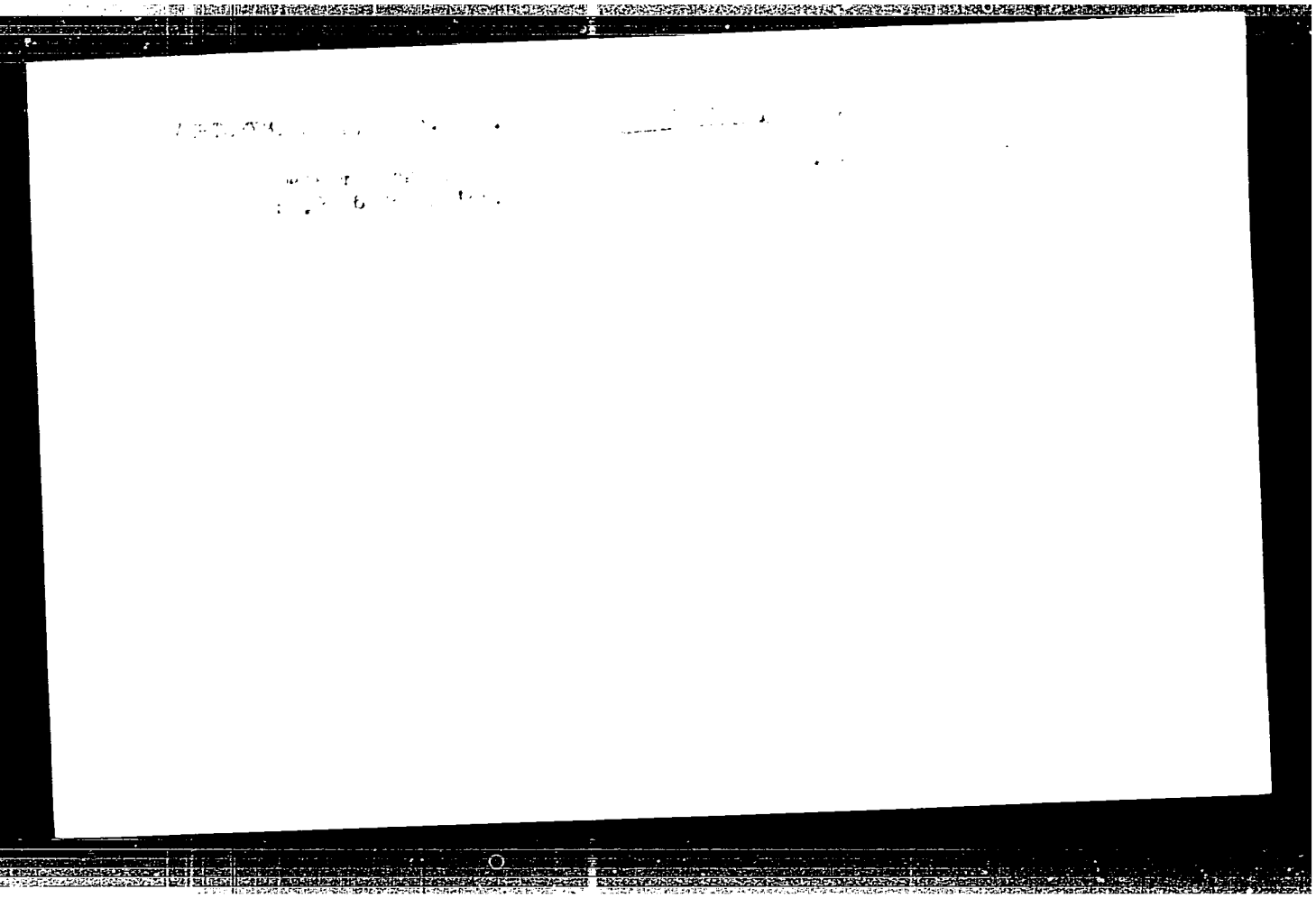
MIKHAYLOV, A.A.

Practice of the machinery plants of the West Ural Economic Council in improving the utilization of rolled sheets. Biul.tekh.-ekon.inform. Gos.nauch.-issl.inst.nauch.i tekh.inform. 17 no.7:30-31 Jl '64. (MIRA 17:10)



MIKHAYLOV, A.A.; GAVRILOV, V.I.

Using plastics in the machine building industry of the west [illegible] Economic Region. Nauch.-tekh. inform. Gos. nauch.-issl. inst. nauch. i tekh. inform. 18 no.7,64 [illegible] 165.



ACC NR: AP6028784 SOURCE CODE: UR/0033/66/043/004/0705/0707

AUTHOR: Mikhaylov, A. A.

ORG: Main Astronomical Observatory, Academy of Sciences SSSR (Glavnaya astronomicheskaya observatoriya Akademii nauk SSSR)

TITLE: The total solar eclipse band of 22 September 1968

SOURCE: Astronomicheskiy zhurnal, v. 43, no. 4, 1966, 705-707

TOPIC TAGS: eclipse, solar eclipse

ABSTRACT: Data are presented on the central line and the band of total solar eclipse which will take place on 22 September 1968. The lunar shadow will enter the earth near Severnaya Zemlya and then move across the Kara Sea slightly to the north of the Yamal Peninsula entering the mainland at the Yugorsk Peninsula. Here, the band of the total eclipse will have a width of 90 km. The town of Vorkuta will remain within the band at its extreme eastern boundary. The lunar shadow will move south almost along the 62--64° meridians of eastern longitude. The height of the sun at the moment of the central eclipse will increase as will the duration of the total phase. The maximum height of 18°.7 and a duration of 42.7 sec will be achieved at a latitude of 55-50° in the Kurgan region. Moving to the southeast the shadow will pass over the Kazakh SSR, intersect the southwest tip of the Balkash Lake and pass to the north of Alma-Ata. Then

UDC: 521.82

Card 1/2

ACC NR: AP6028784

it will bear to the east and enter northern China where it will leave the earth slightly to the north of Lake Lobnor. This entire path with a length of approximately 6150 km will be traveled by the lunar shadow during a period of 69 min with an average velocity of 1.48 km/sec. A table is presented showing railroad stations close to the line of central eclipse. A second table shows the geographical coordinates and other data for the central line computed on the basis of information contained in the USSR Astronomy Yearbook for 1968. Orig. art. has: 2 tables.

SUB CODE: 03/ SUBM DATE: 24Feb66

Card 2/2

ACC NR: AP6028195 (N) SOURCE CODE: UR/0032/66/032/006/0736/0738

AUTHOR: Mikhaylov, A. A.

ORG: None

TITLE: Accelerated determination of endurance limit of galvanized steel

SOURCE: Zavodskaya laboratoriya, v. 32, no. 6, 1966, 736-738

TOPIC TAGS: mechanical fatigue, fatigue strength, fatigue test, alloy steel / 30KhGSNA, 30KhGSA, 20KhN3A, 40KhNMA, 650, 38KhA alloy steel

ABSTRACT: An expeditious method of testing various galvanized specimens of alloy steel for a mechanical fatigue is described. The method is based on the construction of S-N curves from data obtained by testing 2 sets of samples for ultimate strength. The first set (2 or 3 samples) is submitted to rupture at the number of cycles higher than 200,000 cycles, while the rupture for the second set takes place at the number lower than 200,000 cycles. The test data are plotted on a diagram and their upper and lower limits are connected by a straight line. By using this line, it is easy to determine the ultimate strength for 200,000 cycles. The fatigue or endurance limit can be calculated by subtracting 6 kgf/sq mm from the value of ultimate strength given in the diagram. The construction of curves for 30KhGSA, 30KhGSNA, 650, 20KhN3A and 40KhNMA steels is shown in a diagram. The use of this diagram and the calculation of the endurance limit is explained.

Card 1/2 UDC: 620.178.3

ACC NR: AP6028195

The difference in values obtained by this method and by regular tests does not exceed 6.3%, as it is shown in a table. This table also shows the endurance limits and the data on electrolytes and coatings for the tested steels. A 38KhA steel is also included in the table. Orig. art. has: 1 diagram, 1 table.

SUB CODE: 11/ SUBM DATE: None/ ORIG.REF: 001/

Card 2/2

MIKHAYLOV, A.A.

Jubilee session dedicated to the 400th anniversary of Galileo Galilei's birth. Vest. AN SSSR 34 no.6:91 Je '64
(MIRA 17:8)

1. Chlen-korrespondent AN SSSR.

L 19363-66 EWT(1) GW

ACCESSION NR: AP5025621 UR/0033/65/042/005/1062/1066
523.30

6
5
B

AUTHOR: Mikhaylov, A. A.

TITLE: Gravity and the shape of the moon

SOURCE: Astronomicheskiy zhurnal, v. 42, no. 5, 1965, 1062-1066

TOPIC TAGS: planetary astronomy, lunar gravity, lunar motion, lunar topography, planetary satellite, moon, libration

ABSTRACT: Since the shape of the moon is not in a state of hydrostatic equilibrium corresponding to its present speed of rotation, Clairaut's theorem cannot be applied for deriving the normal gravity on the lunar surface. Owing to its low density of 3.34 g/cm^3, the moon may, however, be regarded as fairly homogeneous. Consequently, it is possible to use formulas for determining the attraction of a homogeneous ellipsoids of small eccentricity having the constants GM = 4902866 x 10^6, mean radius 1738.0 km, and difference of semiaxes as derived from physical libration. Three solutions for different values of the libration constant f are obtained, and the formulas for normal gravity on the surface of the corresponding ellipsoid are derived. The profile of the lunar disk is computed by means of Goudas' equation representing the surface of the moon to the fourth harmonic. The problem concerning the mass and

Card 1/2

L 19363-66

ACCESSION NR: AP5025621

the outer gravitational field of the moon could be solved very exactly by putting an artificial satellite around the moon, which would have sufficiently stable motion and could be observed from the earth. Orig. art. has: 2 formulas and 1 figure. [JJ]

ASSOCIATION: Glavnaya astronomicheskaya observatoriya Akademii nauk SSSR (Main Astronomical Observatory, Academy of Sciences, SSSR)

SUBMITTED: 08Jun65 ENCL: 00 SUB CODE: AA

NO REF SOV: 001 OTHER: 003 ATD PRESS: 4110

Card 2/2 BC

MIKHAYLOV, Aleksandr Danilovich, polkovnik; YEMEL'YANOV, V.T., polkovnik, red.; KRASAVINA, A.M., tekhn. red.

[Airborne troops; based on materials in the foreign press]Vozdushnye desanty; po materialam inostrannoi pechati. Moskva, Voenizdat, 1962. 138 p. (MIRA 16:2)
(Airborne troops) (United States--Army)

MIKHAYLOV A.D.

MIKHAYLOV, A. D.

Vibrating closing device for trench conveyers. Avt. dor. 21 no.1: 27-28 Ja '58. (MIRA 11:1)
(Conveying machinery)

MIKHAYLOV, A.D., inzh.

Mechanizing the digging of drainage ditches. Mekh.stroi. 19 no.3:21-22 Mr '62. (MIRA 15:3)
(Excavating machinery)

MIKHAYLOV, A.D., inzh.

Automatic batcher with discharge conveyor. Avt.dor. 25 no.12:25 D '62. (MIRA 16:2)
(Proportioning equipment)

GOLIKOVNIKOV, A.A.; CHEVTSOV, V.P.; MIRSAYLOV, V.I.; [illegible]

Mobile asphalt-concrete plant. Avt. dor. [illegible] (MIRA 18:4)

REKUNCV, N.A.; MIKHAYLOV, A.D.; DOMOKUROV, I.A.; NAZMUTDINOV, R.Sh.; IGUSHKIN, I.A.

SKS-8-59K seismic velocity logging station. Geofiz. razved. no.3:104-109 '61. (MIRA 17:2)

SHISHLYAKOV, A.B., kand.tekhn.nauk; MIKHAYLOV, A.F., inzh.; KRAVTSOV, Yu.A., inzh.

Schematic of a pulse track circuit using rails with concrete ties. Avtom., telem. i sviaz' 7 no.2:5-7 F '63. (MIRA 16:3)
(Railroads—Signaling)

MIKHAYLOV, A.F., kapitan meditsinskoy sluzhby

Some gastroscopic data on patients with functional disorders of the stomach and chronic gastritis. Voen.-med. zhur. no.6:76 Je '61. (MIRA 14:8)

(GASTROSCOPY) (STOMACH--DISEASES)

KHAYLOV, A.F., kapitan meditsinskoy sluzhby

Etiology and course of chronic gastritis. Voen.-med. zhur., no.11:70 N '61. (MIRA 15:6)

(STOMACH—INFLAMMATION)

[illegible] A.I.; [illegible] M.D.; MIKHAYLOV, N.F.; [illegible] V.A.

Age of [illegible] in the Kuznetsk upland based on Paleozoological data. Trudy VNIGRI no.223:93-103 '63
(MIRA 17:9)

MIKHAYLOV, A.F.

New legislation on inventions. Avtom.telem.i sviaz' 3 no.10: 14-15 O '59. (MIRA 13:2)

1. Spetsialist Nauchno-tekhnicheskogo soveta Ministerstva putey soobshcheniya.
(Patent laws and legislation)

MIKHAYLOV, A.F.

How to apply for a certificate of invention. Avtom., telem. i sviaz' 4 no.4:15-18 Ap '60. (MIRA 13:6)

1. Spetsialist Nauchno-tekhnicheskogo soveta Ministerstva putey soobshcheniya.

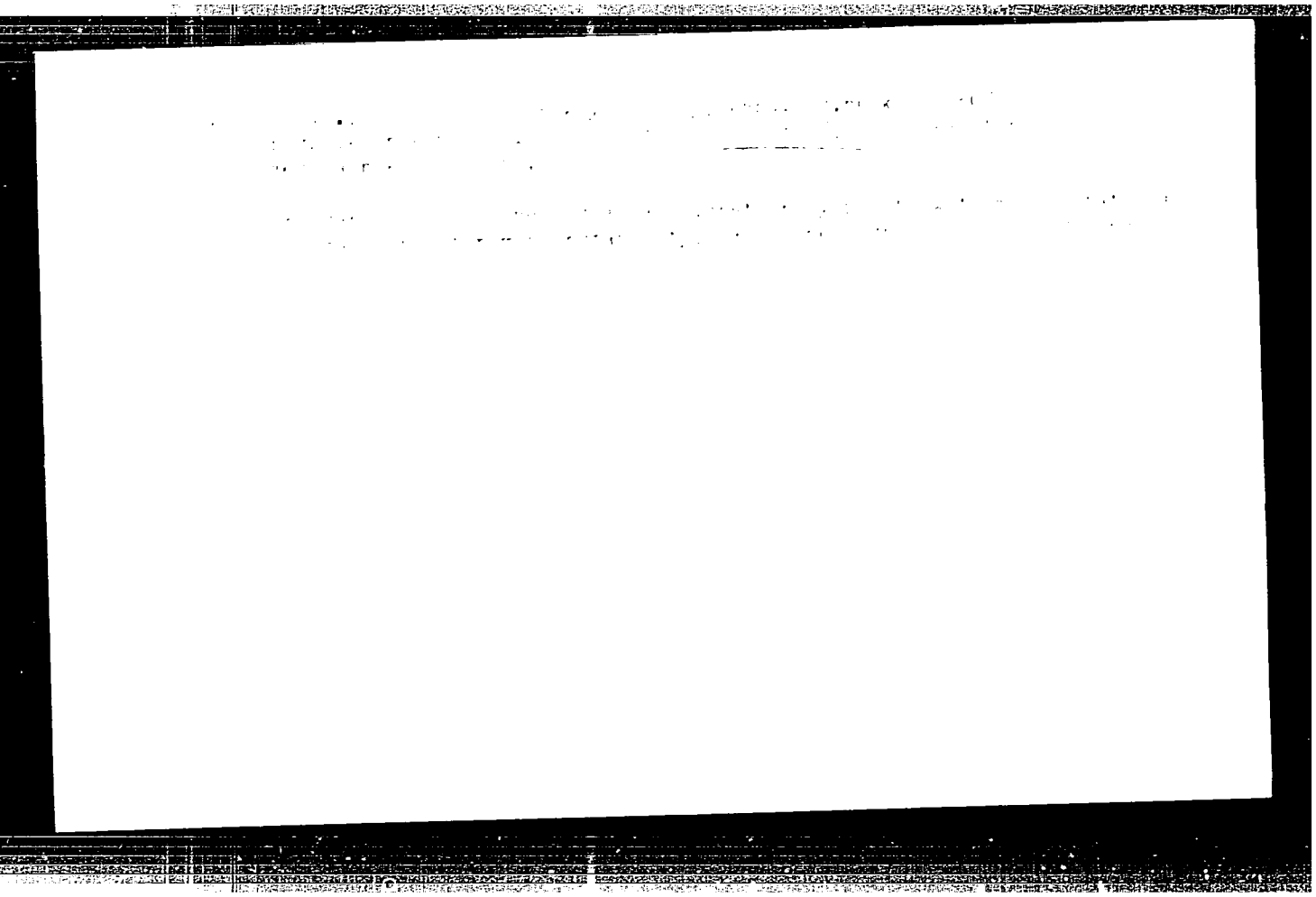
(Patent law)

MIKHAYLOV, A.F.

Premiums and bonus payments to inventors and efficiency experts. Avtom., telem.i sviaz' 6 no.8:22-23 Ag '62. (MIRA 15:8)

1. Spetsialist Nauchno-tekhnicheskogo soveta Ministerstva putey soobshcheniya.

(Technological innovations)



SHISHLYAKOV, A.V., kand. tekhn. nauk; MIKHAYLOV, A.F., inzh.;
KRAVTSOV, Yu.A., inzh.; OKORKOV, V.A., inzh.; REMESH, V.V., inzh.

Operation of pulse-type track circuits on tracks with reinforced concrete ties. Avtom., telem. i sviaz' 7 no.7:4-7 Jl '63.
(MIRA 16:10)

[illegible]KOV, A.V., kand.tekhn.nauk, MIKHAYLOV, A.F., inzh.; KRAVTSOV, [illegible]
A., aspirant

Analysis of the [illegible] circuit in case of a damaged rail. Vest. TSNII MPS 22 no.[illegible] [illegible] (MIRA [illegible])

AUTHORS: Vereshchagin, V. N., and Mikhaylov, A. I. 20-3-33/46

TITLE: On the Stratigraphy of the Upper Cretaceous of the Kamchatka-Anadyr Region (K stratigrafii verkhnego mela Kamchatsko-Anadyrskoy oblasti).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 117, Nr 3, pp. 37 - 39 (USSR).

ABSTRACT: The marine upper cretaceous sediments are widely spread in the aforesaid region, as well as in the mountainous country of Koryak. Their stratigraphy, however, begins to clear up only in recent years. Each new discovery is therefore of great importance. The second author has studied the cross-section of these sediments in the Pontoneic mountains and he collected a considerable quantity of fossils. The latter were studied by the first author. The situation of the aforesaid mountains is described. Their geologic structure is rather complicated. The central part is built of devon-, carbon-, and perm sediments. They form a vast anticlinorium of North-Eastern extension. The cretaceous deposits on its flanks are covered by a wrapper of almost horizontal tertiary sediments (in the South). In the South-East flank the paleozoic deposits are covered by valanginian and by Apt-Alb. The upper cretaceous sediments are deposited in the South-West immediately on the carbon and partly on the perm rocks, with a vast discordance and erosion. The same takes place in North-East and South-West

Card 1/1.

On the Stratigraphy of the Upper Cretaceous of the Kamchatka-Anadyr Region.

direction. The upper cretaceous layers are developed in gentle folds. 3 periods of development of these layers can be distinguished: 1) North-West slope of the Pentenaic mountains, 2) the entrance area of the river Amytin, and 3) North-West slope of the Penteneic mountains. From similar facies, and from geological conditions it may be concluded that sediments of an age approached to each other, occur in 2 places. The authors called them "Tkhlyuvayam-suite". The sequence of the rocks (from below to the top) is: 1) (basal) conglomerates with marbles and rolling stones from granodiorites, paleozoic sandstones, argyllites, a. o. (200m), 2) small layers of sandstones with argyllite strata and lime concretions, containing: Neocrioceras cf. spinigerum, Trigonia ex gr. subovalis, Lopatinia kamtschatica, Goniomya sp., Yatica sp. (30m). 3) Slightly diagenesized argyllites with lime-concretions containing Brahmaites brahma, some new species of Inoceramus, Mya, sp., a. o. (200m). 4) Sandstones with conglomerate intercalate layers containing Inoceramus (some new species), Trigonia (like 2), Pecten (Entolium) sp. and Gastropoden (250 m). Sandstones with slightly diagenesized interbedded argyllites and brahmaites cf. vishnu, as well as containing several new Inoceramus species (350). The total thickness of

Card 2/4

the suite is determined with 300 m. The lower part of the suite can be classified with Cognaciae and Santoniae. In connection with the stratigraphically close vicinity of Kosmaticeras and Brahmaites, a correction of the evolution scheme of the family Kossmaticeridae (according to Matsumoto) shall be necessary. The layers with Kossmaticeras are apparently younger and those containing Brahmaites are apparently older than this author assumes. The fauna of the sediments of the Pontoneic mountains is curious in spite of its correlation with the neighboured mountains (except Trigonien, some Inoceramen and Parallelodon). The Tikhlyavayam suite is supposed to belong to the Orochen series of Sakhalin synchron. 2 conglomerate masses were found in the sediments of the East shore of the bay of Penzhinskaya Guba. The considerable thickness of the basaltic conglomerates of the suite concerned and the existence of large rolling stones and blocks points out that the Pontoneic mountains in the Senon Age have formed a part of the archipelagos to which the sea pushed forward. Thus the Upper Cretaceous transgression began in the Senoman, increased gradually and attained its vatest expansion in the Senon. It may be assumed that the penetration of granodiorit-intrusions is

On the Stratigraphy of the Upper Cretaceous of the Kamchatka-Anadyr Region. 20-3-33/46

correlated with the pre-cretaceous-phase of the fold (of strata).

ASSOCIATION: All-Union Scientific Research Institute for Geology. North-Eastern Geological Administration (Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy institut. Severo-vostochnoye geologicheskoye upravleniye).

PRESENTED: February 2, 1957, by D. V. Nalivkin, Academician.

SUBMITTED: December 19, 1956.

AVAILABLE: Library of Congress.

Card 4/4

MIKHAYLOV, A.F.

Chromium spinellids of Penzhina District. Trudy VSEGEI 60:153-158 '61. (MIRA 15:5)

(Penzhina District--Spinel group)

MIKHAYLOV, A.F.

Geological and petrological characteristics of ultrabasites and ultrabasite breccia in the southwestern part of the Penzhina Range. Trudy VSEGEI 73:111-132 '62. (MIRA 15:9)
(Penzhina Range--Ultrabasite) (Penzhina Range--Breccia)

MIKHAYLOV, A.F., inzh.; KRAVSTSOV, Yu.A.

Analyzing the control operations in the circuit track. Vest. TSNII MPS 23 no.8:46-47 '64 (MIRA 18:2)

MIKHAYLOV, A.G. [deceased]; MIKHAYLOV, S.S. (Leningrad, K-9, Lesnoy pr., 4, kv.71)

Distribution of the myelinated nerve fibers in the roots of the lumbar and sacral segments of the spinal cord. Arkh. anat. gist.i embr. 38 no.1:75-82 Ja '60. (MIRA 13:7)

1. Kafedra operativnoy khirurgii(nachal'nik - chlen-korrespondent AMN SSSR prof.A.N.Maksimenkov) Voyenno-meditsinskoy ordena Lenina akademii im. S.M.Kirova.
(SPINAL CORD)

MIKHAYLOV, A. G.

Lowering pipelines to the bottom of the ocean. Stroi. truboprov. 5 no.9:31 S '60. (MIRA 13:9)
(United States--Pipelines)

MIKHAYLOV, A.G.

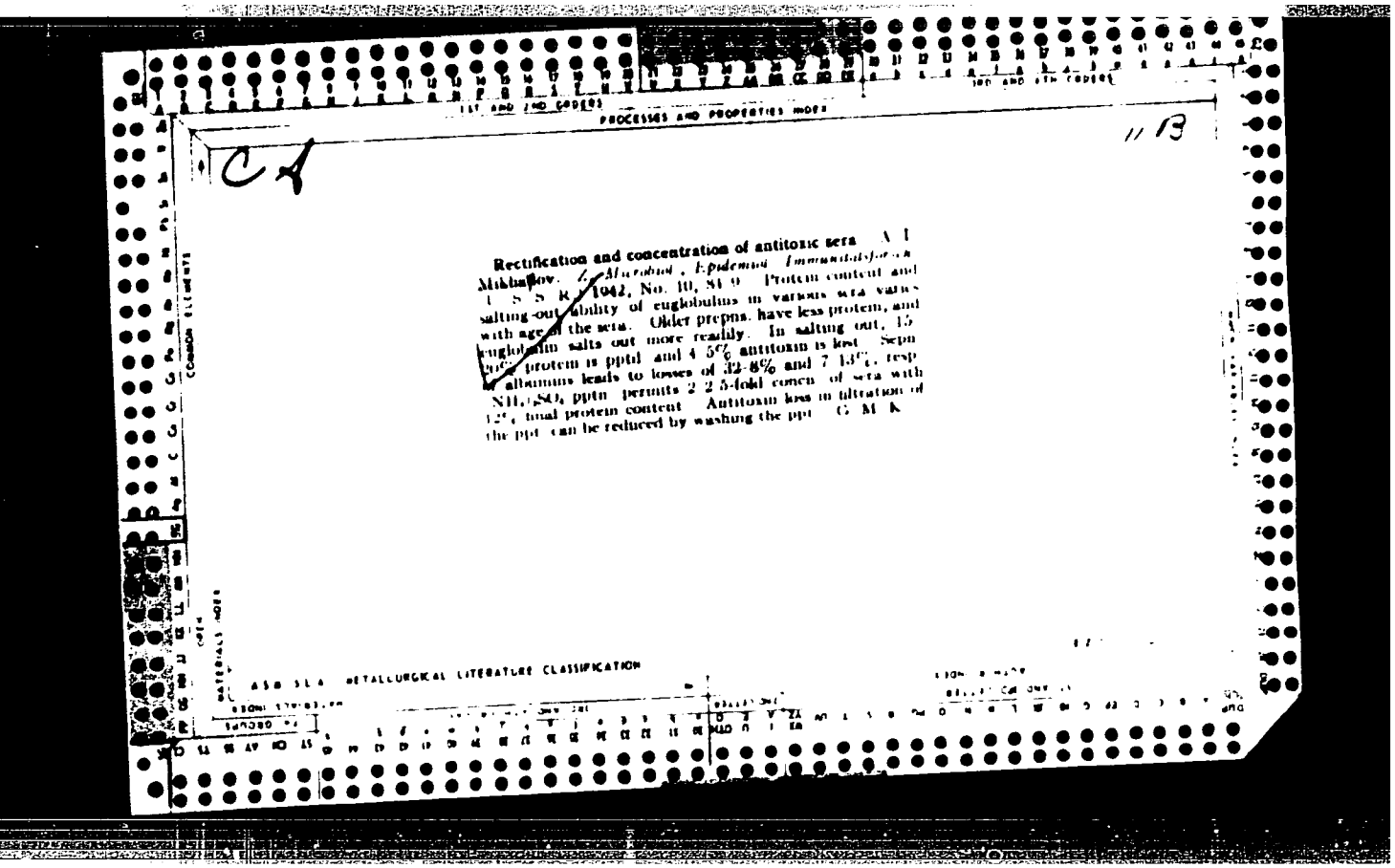
Gluing pipes instead of welding. Stroi. truboprov. 6 no. 1:32 - 3 of cover Ja '61. (MIRA 14:2)
(United States--Pipelines)

BUYANOV, Yu.D., kand.tekhn.nauk; Prinimali uchastiye: MIKHAYLOV, A.G., prof., doktor tekhn.nauk; URAL'SKIY, B.P., kand.geol.-mineral.nauk; KURENKOVA, N.N., gornyy tekhnik

Using lacrustine-glacial (sub-surface) clays and clayey soils at the quarry of the Odintsovo brick plant. Sbor. trud. TSIZelezobetona no.7:164-177 '62. (MIRA 16:1)
(Odintsovo region (Moscow Province)--Clay)

MIKHAYLOV, A.G.

Foreign technology; new coatings for pipes. Stroi. tr. [illegible] :
33 Jl '64.



CA

11 13

Rectification and concentration of antitoxic sera A I Mikhailov. *Zh. Mikrobiol., Epidemiol. Immunobiol.* U S S R, 1942, No. 10, 51-9. Protein content and salting-out ability of euglobulins in various sera vary with age of the sera. Older prepns. have less protein, and euglobulin salts out more readily. In salting out, 15 g. protein is pptd. and 4.5% antitoxin is lost. Sepn. of albumins leads to losses of 32.8% and 7.13%, resp. $(NH_4)_2SO_4$ ppts. permits 2.2.5-fold concn. of sera with 12% final protein content. Antitoxin loss in filtration of the ppt. can be reduced by washing the ppt. C. M. A.

ANDZHAPARIDZE, O.G.; DURASOVA, M.N., ZUBOVA, Z.F.; MIKHAYLOV, A.I., MOSKVICHEVA, N.V.; POMOMAREVA, N.A.

Investigations of the concentration and purification of serum against encephalitis. Zhur.mikrobiol.epid. i immun. no.5:20-23, My '55. (MLRA 8:7)

1. Iz Gosudarstvennogo kontrol'nogo instituta imeni Tarasevicha (dir. S.I. Didenko) i Moskovskogo instituta vaktsin i syvorotok imeni Mechnikova (dir. A.P. Kuzychenko)

(ENCEPHALITIS, EPIDEMIC, prevention and control.
immune serums, concentration & purification)
(IMMUNE SERUMS,
anti-ecephalitis, concentration & purification)

MIKHAYLOV, A.I.; ROGOZINA, Ye.N.

Effect of phenol and temerature in thermal denaturation on the purification and concentration of antitoxic sera using the method of enzymatic hydrolysis. Zhur.mikrobiol., epid. i immun. 27 no.8: 83-87 Ag '56. (MLRA 9:10)

1. Iz Moskovskogo instituta vaktsin i syvorotok imeni I.I.Mechnikova.
(IMMUNE SERUMS,
eff. of phenol & of temperature in thermal denaturation on purification & antitoxic properties in fermentative hydrolysis (Rus))
(PHENOLS, effects,
on immun serum antitoxic properties in fermentative hydrolysis (Rus))

MIKHAYLOV, A.I.; SHABORDINA, D.A. [deceased]

Methods for the purification and concentration of antitoxic serums; on the 50th anniversary of Russian investigations. Zhur.mikrobiol. epid.i immun. 30 no.10:85-90 O '59. (MIRA 13:2)

1. Iz Moskovskogo instituta vaktsin i syvorotok imeni Mechnikova.
(IMMUNE SERUMS chem.)

MIRONOV, G.S.; MIKHAYLOV, A.I.; ASTAKHOVA, L.Ye.

Effect of chlortetracycline and cortisone on the cholesterol level of the blood serum in patients with acute bacillary dysentery. Antibiotiki 7 no.7:636-638 Jl'62. (MIRA 16:10)

1. Kafedra infektsionnykh bolezney (nachal'nik - prof. P.A. Alisov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.
(CHLORTETRACYCLINE) (CORTISONE) (CHOLESTEROL)
(DYSENTERY)

L 14639-66 EWT(l)/EWP(m)/EWT(m)/EDC(f)/EPF(n)-2/EWG(m)/EWA(d)/ECS(k)/EWA(l)
ACC NR: AP6003582 JD/WW SOURCE CODE: UR/0170/65/010/001/0022/0025

AUTHOR: Mikhaylov, A. I.; Kalinin, E. K.; Dreytser, G. A. 61 B

ORG: Aviation Institute im. Sergo Ordzhonikidze, Moscow (Aviatsionnyy institut)

TITLE: Investigation of heat transfer in a longitudinal flow of air around a staggered tube bank 21,44,55 1,55

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 10, no. 1, 1966, 22-25

TOPIC TAGS: convective heat transfer, gas flow, boundary layer theory, heat transfer coefficient, heat transfer

ABSTRACT: The article gives the results of an investigation of heat transfer in a longitudinal flow of air around a staggered tube bank with a relative tube spacing of s/d equal to 1.2, with heating and cooling of the air. Experimental Section No. 1 (heating) consisted of 19 tubes 11 ± 0.01 mm in diameter and with a wall thickness of 0.65 ± 0.01 mm. Heat transfer coefficients were measured in a previously determined section with a stabilized flow of air; length of the section was 800 mm. The temperature of the tube walls was measured at the beginning, in the middle, and at the end of the experimental section. The amount of heat

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UDC: 536.244

evolved in the experimental section was determined from the change in the heat content of the air. Construction of the cooling section (No.2) was analogous to that of the heating section. The experimental sections were placed vertically. In Section 1, the air flowed upwards, and in Section 2, downwards, so that in both cases the direction of free and forced convection coincided. It was found that in the turbulent region the experimental data are, on the average, 12% higher than according to the formula of Mikheyev for tubes:

$$Nu_n = 0{,}018 Re_n^{0.8}. \quad (3)$$

Treatment of the experimental data with respect to the mean temperature of the boundary layer shows that the data are, on the average, 11% higher than according to the Weisman formula:

$$Nu_f = (0{,}026 s/d - 0{,}006) Re_f^{0.8} Pr_f^{1/3}, \quad (4)$$

taking into account the dependence of heat transfer in staggered tube banks on the spacing. The experimental data for cooling, with $Re_n > 3 \times 10^4$, can be correlated by the formula:

$$Nu_n = 0{,}0206 Re_n^{0.8} \quad (5)$$

and are, on the average, 2% higher than the data for heating. Orig. art. has: 5 formulas and 2 figures. [06]

SUB CODE: 20/ SUBM DATE: 29Mar65/ ORIG REF: 004/ OTH REF: 005

ATD PRESS: 4198

Card 2/2 dlc

KAZANSKIY, G.S.; MIKHAYLOV, A.I.; MYZNIKOV, K.P.; TSARENKOV, A.P.

[Methods for changing the duration of the interaction between the beam and the target in a synchrophasotron at 10 Bev] Metody izmeneniia dlitel'nosti vzaimodeistviia puchka s mishen'iu v sinkhrofazotrone na 10 Bev. Dubna, Ob"edinennyi in-t iadernykh issl., 1961. 17 p. (MIRA 15:1)
(Synchrotron) (Protons)

S/120/62/000/005/002/036
E032/E314

AUTHORS: Kazanskiy, G.S., Mikhaylov, A.I., Myznikov, K.P. and Tsarenkov, A.P.

TITLE: Methods of varying the time of interaction of the beam with the target in the 10 GeV proton synchrotron

PERIODICAL: Pribory i tekhnika eksperimenta, no. 5, 1962, 19 - 24

TEXT: Experiments designed for the proton synchrotron at the Joint Institute for Nuclear Studies require the availability of secondary-particle pulses of different lengths. Secondary particles are produced by bombarding an internal target and the time of interaction of the beam with the target determines the length of the secondary-particle pulse. The authors give in this paper a brief summary of the various methods used to alter the beam-target time of interaction. The methods for increasing the time of interaction are as follows: 1) resonance build-up of oscillations in which the resonance is excited artificially by modulating the accelerating voltage in such a way that the particles leave the phase-stability region. Particles leaving

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the acceleration process are deflected by the variable magnetic field onto the target and the time of interaction with the target is adjusted by adjusting the modulation amplitude. In this way, the length of the secondary-particle pulses can be increased to 250 ms. 2) Slow reduction in the amplitude of the accelerating voltage. This method is also based on the removal of the accelerated particles from synchronism by reducing the region of phase stability. The method has been discussed theoretically by V.I. Kotov and L.L. Sabsovich (PTE, 1957, no. 6, 19). However, an empirical approach was found to be more suitable. 3) Slow variation in the frequency of the accelerating voltage. A change in this frequency produces a change in the radius of the equilibrium orbit. This effect has been considered theoretically by M.S. Rabinovich (Tr. FIAN SSSR, 1958, 10, 23). The rate at which the beam is displaced onto the target is proportional to the rate of change in the frequency. Linear variation in the frequency was found to be inadequate and a special feedback system which controls the relation between the frequency and the magnetic field was developed, using the radial beam-position indicator reported by F.A. Vodop'yanov et al

Methods of varying S/120/62/000/005/002/036
E032/E314

(Proceedings of the International Conference on High Energy Accelerators and Instrumentation, CERN, Geneva, 1959).
The methods used to reduce the beam-target interaction time were as follows: a) reduction in the radial dimensions of the beam during the acceleration process. In this method the width of the beam was reduced by slowly varying the frequency of the accelerating voltage; b) instantaneous change in the phase of the accelerating voltage. Here, the time of interaction was reduced by increasing the rate of displacement of instantaneous equilibrium orbits; c) rapid variation in the frequency of the accelerating voltage. This method has the considerable advantage that it gives rise to very little change in the output intensity (low particle losses). With a frequency variation of 1.8 Mc/s/s, the time of interaction can be reduced to 2 μs. This corresponds to the interception of 70% of the original beam by the target. There are 8 figures.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute for Nuclear Studies)

SUBMITTED: December 9, 1961

Card 3/3

S/056/62/043/003/039/063
B108/B102

AUTHORS: Gorshkov, V. G., Mikhaylov, A. I.

TITLE: Angular distribution of photoelectrons from the K shell

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 3(9), 1962, 991 - 1004

TEXT: The K shell photoelectron angular distribution is calculated using a power expansion in αZ as the electron wave function in the Coulomb field (V. G. Gorshkov, ZhETF, 40, 1481, 1961). Further, the matrix element is expanded in terms of $\eta = m\alpha Z$. The effect of screening on the K electron wave function can be taken into account by substituting $Z_{eff} = Z - 0.3$ for Z. This is not done here since the correction would be beyond the accuracy of measurement. The angular distribution is

$$I(\theta, \cos^2\varphi) = d\sigma/d\Omega = (\alpha Z)^2 M \{F + \pi\alpha ZG + (\alpha Z)^2 H\}, \quad (27),$$

$$M = \frac{(2\pi)^3 \alpha p E}{k} \frac{2}{\pi} N_b^2 N_p^2 \left|\left(\frac{a_0}{b_0}\right)^{i\xi}\right|^2 \frac{8p^2 mk}{kE(2Ek)^4} = \alpha \frac{4\pi m p^2}{E^4 k^6} N_b^2 N_p^2 \left|\left(\frac{a_0}{b_0}\right)^{i\xi}\right|^2, \quad (28)$$

$$\cos\theta = \frac{pk}{pk}, \quad \cos^2\varphi = \frac{(pe)^2}{p^2 \sin^2\theta}, \quad N_p^2 = \frac{2\pi\xi}{1 - e^{-2\pi\xi}},$$

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where $N_p = e^{\pi\xi/2}|\Gamma(1 - i\xi)|$, $\xi = \alpha Z\varepsilon/p$, $N_b^2 = (2\eta)^{2\gamma+1}(1+\gamma)/8\pi\Gamma(2\gamma+1)|^2(1+\sigma)$, $\gamma = (1-\alpha^2Z^2)^{1/2}$, $\sigma = 1-\gamma$. $a_0 = q^2+\ldots^2$, $b_0 = k^2-(p+i\ldots)^2$, $\vec{q} = \vec{k} - \vec{r}$; $(a_0/b_0)^{i\xi} \approx |a_0/b_0|^{i\xi} \exp(-\xi p\alpha Z/k)\exp(-\xi\pi)$. The expression for the second correction of the order $(\alpha Z)^2$ in Sauter's formula cannot be represented in analytical form unless it is expanded in a series of a new parameter. For forward scattering, expansion of the matrix element with respect to η yields

$$I(0) = \frac{d\sigma}{d\Omega}\Big|_{\theta=0} = (\alpha Z)^3 MR\,\{F_1 + \pi\alpha Z G_1 + \pi\alpha Z^{1/2} G_2\}. \quad (50)$$

$$F_1 = \frac{m^2}{q^2}|\tau_1|^2 = \frac{m^2}{16q^2}\left(1 - \frac{q}{2k}\right)^2\left[\left(\pi\frac{k}{p}\right)^2 + 4\left(1 - \frac{q^2}{2kp}\ln\frac{k}{q}\right)\right]. \quad (51)$$

$$G_1 = \frac{m^2}{q^2}\,2\,\mathrm{Re}\,(\tau_2 + \tau_0)\,\tau_1^* =$$

$$= \frac{m^2}{2q^2}\left(1 - \frac{q}{2k}\right)\left[1 + \frac{k}{p}\,\mathrm{Re}\,\tau_2 - 2\left(1 - \frac{q^2}{2kp}\ln\frac{k}{q}\right)\mathrm{Im}\,\tau_2\right]. \quad (52)$$

$$G_2 = \frac{137}{121}\frac{m^3}{q^3}\,2\,\mathrm{Re}\,\tau_2\tau_1^* = 1{,}47\,\frac{m^4}{q^4}\left(1 - \frac{q}{2k}\right)\frac{k}{p}. \quad (53)$$

Card 2/3

where $R = 2k^5E^4/m^3p^2q^4$, $h = p+k$. The τ's are the expansion coefficients. The quantity usually measured is the ratio $\varkappa(k,Z,\theta_{max}) = I(0)/I_{max}$. The calculated ratio is in good agreement with experimental data. This is due partly to the fact that the errors in Eq. (27) and in Eq. (50) cancel out. There is 1 figure.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute imeni A. F. Ioffe of the Academy of Sciences USSR)

SUBMITTED: April 2, 1962

Card 3/3

45137
S/089/63/014/002/003/019
B102/B186

246730

AUTHORS: Kazanskiy, G. S., Kuznetsov, A. B., Mikhaylov, A. I., Rubin, N. B., Tsarenkov, A. P.

TITLE: Investigation of the beam formation of accelerated particles in the proton-synchrotron by means of induction electrodes

PERIODICAL: Atomnaya energiya, v. 14, no. 2, 1963, 153 - 158

TEXT: The beam formation process in the first stage of acceleration at the proton-synchrotron of the Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research) in Dubna was studied with the help of electrostatic signal electrodes (Vodop'yanov, Kuzmin, et al., Proc. Intern. Conf. High-Energy Accelerators and Instrumentation, CERN, Geneva, 1959, p. 470, 477; Kazanskiy et al., Preprint OIYaI, B-50-819, Dubna, 1961). These electrodes are broad copper plates arranged to form two systems on either side of the beam. The plates of one system are arranged symmetrically to the mid-plane of the magnet (vertical electrodes), and those of the other perpendicular thereto (radial electrodes). The signal $V(\varphi)$ induced in the vertical electrodes is proportional to the change in the

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Investigation of the beam...

azimuthal charge density in the flying bunch; $V(\varphi) \simeq \frac{q(\tau)}{C} \frac{l}{\pi} 2\pi$, where l is the electric length of the electrodes, C the capacitance of the plates relative to the earth, and π the perimeter of the equilibrium orbit. $V(\tau)$ is led to an integrator which yields $V_{mean} = l\alpha/\pi C$, α being the charge of the accelerated bunch. For the proton-synchrotron of the OIYaI the sensitivity of the vertical electrodes, $a = C/el$, was $1 \cdot 10^{12}$ protons/v; $\pi = 208$ m, $l = 0.5$ m, $C = 400$ $\mu\mu$f. If the output voltage V_{out} (cf. Fig. 1) is measured and the amplification factor K is known, the number of protons in the bunch, $N = V_{out} a/K$, is determined. The signal $U(\tau)$ of the radial electrodes records the horizontal deviation of the beam from the equilibrium radius; the radial sensitivity is 2v/cm. The electrode installation has a pass band of 0.1 - 3 Mc which allows a distortion-free recording of $V(\varphi)$ and $U(\varphi)$ and their amplitude modulation. A consideration of the motion of the particles along the phase trajectories taking account of the free oscillations shows that the amplitude structure of the beam must be observed during 100 - 150 μsec after the switching-on of the accelerating voltage; the beam formation takes place during the first 1 - 1.5 msec. The

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Investigation of the beam... S/089/63/014/002/003/019
B102/B186

radial phase oscillations of the beam are accompanied by the oscillations of the azimuthal density with the frequencies Ω and 2Ω, where Ω is the angular frequency of the phase oscillations. The amplitudes of these oscillations depend on $\Delta M/b$, ΔM being the initial energy spread and b the radial separatrix half-dimension. If $\Delta M/b = 1$, the oscillation with the frequency 2Ω vanishes; if $\Delta M/b \ll 1$, the damping of these oscillations takes place in 30 - 50 periods of the phase oscillations. The greater $\Delta M/b$, the more rapid is the damping. The same is true for the oscillations of the charge center. To the signal modulation with 40 - 50% depth observed at the synchrotron there corresponds a total initial energy spread of $\sim 1.5\%$.
There are 10 figures.

SUBMITTED: April 4, 1962

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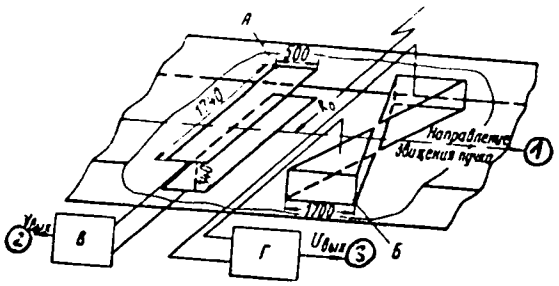
Investigation of the beam... S/089/63/014/002/003/019
B102/B186

Fig. 1. System of induction electrodes.

Legend: A - vertical electrodes, [illegible] - radial electrodes, B - amplifier for the measuring system of the beam intensity, [illegible] - transmitter of the radial beam position; (1) beam direction, (2) V_{out}, (3) U_{out}.



Card 4/4

L 13842-63 EWT(1)/EWG(k)/BDS/EES(b)-2 AFFTC/ASD/ESD-3 Pz-4
AT/IJP(C)
ACCESSION NR: AP3003150 S/0056/63/044/006/2142/2149

65
63

AUTHOR: Gorshkov, V. G.; Mikhaylov, A. I.

TITLE: Atomic photoeffect at high energies

SOURCE: Zhurnal eksper. i teor. fiziki, v. 44, no. 6, 1963, 2142-2149

TOPIC TAGS: atomic photoeffect, high energies, extreme relativistic velocities, emitted electron wave function, distorted plane wave solution, angular distribution

ABSTRACT: It is shown that in the extreme relativistic case the main contribution to the photoeffect cross section is made by the wave function of the emitted electron in the form of a solution of the Schroedinger equation with energy E equal to the momentum p. The permissible error in the cross section is in this case of the order of the reciprocal of E squared. It is shown further that the results of the calculations with this function coincide with the results obtained when the distorted plane wave is used, rigorously proving by the same token the sufficiency of the use of the distorted plane wave in calculations for the high-energy photoeffect. An analytic expression is obtained for the photoeffect cross section at small angles. The limiting value of the nuclear charge Z, starting with which the maximum of the angular distribution of the photoelectrons conicides

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L 13842-63
ACCESSION NR: AP3003150

2

with the zero angle, is determined. "The authors are indebted to L. A. Sliv for valuable comments and to B. Nagel for preprints of his papers. Orig. art. has 39 formulas.

ASSOCIATION: Fiziko-tekhnicheskiy institut im. A. F. Ioffe Akademii nauk SSSR (Physicotechnical Institute, Academy of Sciences, SSSR)

SUBMITTED: 12Feb63 DATE ACQ: 23Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 004 OTHER: 008

Card 2/2

L 4232-66 EWT(m)/EPA(w)-2/EWA(m)-2 IJP(c) GS

ACCESSION NR: AT5007970 S/0000/64/000/000/0970/0975

AUTHOR: Kazanskiy, G. S.; Kuznetsov, A. B.; Mikhaylov, A. I.; Tsarenkov, A. P.; Chekhlov, K. V.; Rubin, N. B.

TITLE: Certain special features governing the adjustment of the acceleration regime on the OIYaI 10-Gev synchrophasotron

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963. Trudy. Moscow, Atomizdat, 1964, 970-975

TOPIC TAGS: high energy accelerator, proton accelerator, linear accelerator

ABSTRACT: The oscillogram form of the signals recorded by inductive electrodes in the quasi-betatron regime is due to the subsequent entrapment of the particles into acceleration. The signals are proportional to the variation in the density (e. g. of the order of $2.5 \cdot 10^{10}$ to $5.2 \cdot 10^{10}$ protons per pulse) of the particles in the quasi-betatron state in the case of multi-rotation injection at the azimuth of the "vertical" induction electrodes (Kazanskiy, G. S., et al. *Atomnaya energiya* 14, 153 (1963)). The oscillograms also indicate the state corresponding to particle storage in the accelerator chamber. Measurements show that a small group of particles, comprising about 0,5% ($5 \cdot 10^9$ protons per pulse) of the total number of par-

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ACCESSION NR: AT5007970

ticles injected, takes part in the formation of the signal. The frequencies in the central part of the signal correspond to the frequency of revolution or are multiples of it. The appearance of such frequencies can explain the presence of the charge front during input of the particles into the accelerator chamber (or the formation of the drop in density at the moment of intensive losses at the beginning of injection), and also the amplitudinal nonequilibrium of the injection current from the linear accelerator, if there occur here azimuthal inhomogeneities whose extent is less than the perimeter of the equilibrium orbit. The connection between the form of the high-frequency signal under consideration and the subsequent entrapment of the particles into the synchrotron state is characteristic. If the oscillations close to the "rear" signal front formed by the particles with amplitudes of betatron radial oscillations are damped, then the effectiveness of entrapment decreases, and in the absence of such damping the effectiveness is greater, as shown by the oscillograms. In the case of the "differential" method of signal recording with induction electrodes, signals are observed whose form can be modified from sinusoidal to a series of discrete pulse-formed signals. In most cases (excluding those where the values n are resonant) the general picture represents the result of superposition of this and another group of signals, as seen on os-

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ACCESSION NR: AT5007970

cillograms. The present report discusses the following pertinent topics: quasi-betatron state; synchrotron state; system of high-frequency accelerator supply; programming and adjustment of regimes suitable for physical experiments. The authors show that, by combining the various methods of beam output against a target and applying one or another method of selection, one can utilize intelligently the intensity in the accelerator cycle, thus ensuring a combination of different physical experiments. Orig. art. has: 6 figures, 6 formulas.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy, Dubna (Joint Institute of Nuclear Research)

SUBMITTED: 26May64 ENCL: 00 SUB CODE: NP

NO REF SOV: 004 OTHER: 000

Card 3/3

L 29108-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EWP(j)/EWA(h)/EWA(l) Pc-4/Pr-4/
Peb/Pu-4 RPL WW/JFW/GG/RM
ACCESSION NR: AP5002728 S/0195/64/005/006/1020/1027

AUTHORS: Mikhaylov, A. I.; Lebedev, Ya. S.; Buben, N. Ya.

TITLE: Stepwise recombining of free radicals in irradiated organic substances

SOURCE: Kinetika i kataliz, v. 5, no. 6, 1964, 1020-1027

TOPIC TAGS: irradiation, fast electron, free radical, kinetics, decay scheme, glycine, malonic acid, acetic acid, palmitic acid, naphthalene/ EPR 2 IKh F AN SSSR spectrometer

ABSTRACT: A systematic investigation performed on free radicals obtained by irradiation with fast electrons showed that under isothermal conditions these radicals recombine in a stepwise manner. The general characteristics of the process were determined by the study of radical decays in glycine, malonic acid, acetic acid, palmitic acid, phenol, naphthalene, etc., involving rapid and slow crystallizations of liquids in boiling nitrogen or at 0.3 - 0.5 degrees/minutes cooling. Nonpaired spins were measured with the EPR-2 IKhF AN SSSR spectrometer between -160 and +150C. Stepwise recombining occurs in wide temperature ranges: glycine (-140 to +130C), malonic acid (-140 to +70C), phenol (-160 to +5C). The concentration of radicals is a function of temperature and not of the thermal treatment (see Fig. 1

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L 29108-65

ACCESSION NR: AP5002728 3

on the Enclosure), while the time of attaining the condition of equilibrium may vary from hours to a few seconds. Uniform crystals and frozen substances take longer. V. V. Voyevodskiy and Yu. N. Molin took part in discussions of the results, I. I. Chkheidze provided the necessary substances.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics AN SSSR)

SUBMITTED: 11Dec63 ENCL: 01 SUB CODE: OC, NP

NO REF SOV: 018 OTHER: 009

Card 2/3

L 29108-65

ACCESSION NR: AP5002728

ENCLOSURE: 01

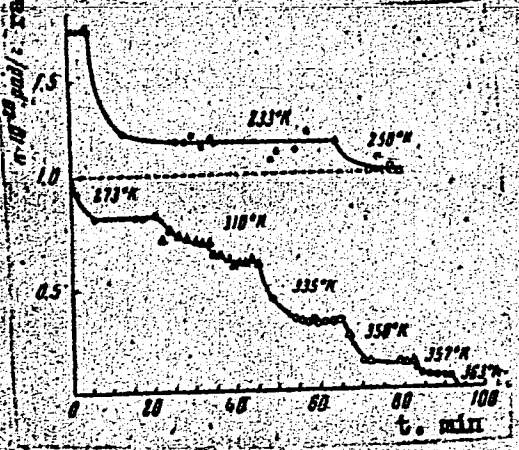

Fig. 1. Kinetics of the decay of free radicals in irradiated malonic acid at various temperatures. (powders, D = 5 M rad)

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ACCESSION NR: AP4042961 S/0048/64/028/007/1169/1172

AUTHOR: Gorshkov, V.G.; Mikhaylov, A.I.

TITLE: Concerning the relativistic atomic photoeffect /Report, 14th Annual Conference on Nuclear Spectroscopy held in Tibilisi 14-21 Feb 1964/

SOURCE: AN SSSR. Izv. Seriya fizicheskaya, v.28, no.7, 1964, 1169-1172

TOPIC TAGS: photonuclear reaction, photoelectron, gamma cross section

ABSTRACT: The authors have put together an approximate relativistic formula for the atomic photoeffect cross section from the following components: a formula for the cross section at zero scattering angle which the present authors have previously published (V.G.Groshkov and A.I.Mikhaylov,Zhur.eksp.i teor.fiz.43,991,1962); the formula for the cross section derived by F.Sauter (Ann.Physik,11,454,1931) and by M.Gavrila (Phys.Rev.113,514,1959; Nuovo cimento 15,691,1960), which is incorrect at small scattering angles; and a correction to the Sauter-Gavrila formula which the present authors also published in the reference cited above. An error in the earlier paper is pointed out and corrected. The new formula is discussed briefly, and it is concluded that it is valid at all scattering angles, that it is applicable at phot-

ACCESSION NR: AP4042961

on energies as low as 0.3 MeV, and that its error is probably of the order of $0.1(CZ)^2$ at photon energies greater than 0.5 MeV. The angular distributions of the photoelectrons ejected from neodymium and uranium by 0.662 MeV photons and from bismuth by 1.332 MeV photons were calculated, and the results are compared with those of similar calculations by R.H.Pratt, D.Levee, R.C.Pexton and W.Aron (Preprint ITP-92) and with the experimental data of A.A.Rimskiy-Korsakov and V.V.Smirnov (Zhur.eksp.i teor.fiz. 42,67,1962; Izv.AN SSSR,Ser.fiz.26,1169,1962). The results of the two calculations do not differ greatly, but those obtained with the present formula are in somewhat better agreement with the experimental data than are those of Pratt et al. "The authors are grateful to L.A.Sliv for critical remarks." Orig.art.has: 6 formulas and 3 figures.

ASSOCIATION: none

SUBMITTED: 21Nov63

ENCL: 00

SUB CODE: NP

NR REF SOV: 002

OTHER: 003

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L 00068-66 EWT(m)/EPA(w)-2/EWA(m)-2 IJP(c)

ACCESSION NR: AP5021327 UR/0120/65/000/004/0039/0042
539.1.073.3

41
39
B

AUTHOR: Kazanskiy, G. S.; Mikhaylov, A. I.; Moroz, V. I.

TITLE: Synchronization of the operation of two bubble chambers during a single accelerating cycle of the 10 BEV proton synchrotron

SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1965, 39-42

TOPIC TAGS: bubble chamber, synchrotron, proton accelerator, particle accelerator target, BEV accelerator

ABSTRACT: This article describes a method for the joint operation of two bubble chambers during a single accelerating cycle of the synchrotron of the OIYaI. This type of simultaneous operation was first achieved in 1962 and is presently in widespread use. The problems connected with the stabilization of the given intensity levels of the proton beam incident on the targets are briefly discussed. The article contains also the pertinent data concerning the operating conditions of the two jointly acting chambers. The method outlined can be extended to an even larger number of bubble chambers. "The authors thank Yu. A. Troyan and A. P. Tsarenkov for participating in the establishment of the joint operation of the two

Card 1/2

L 00068-66

ACCESSION NR: AP5021327 2

chambers." Orig. art. has: 2 formulas and 2 figures.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy, Dubna
(Joint Institute for Nuclear Research)

SUBMITTED: 27May64 ENCL: 00 SUB CODE: NP

NO REF SOV: 005 OTHER: 000

Card 2/2

L 39695-65 EPF(c)/EWP(j)/EWT(m)/Pc-4/Pr-4 RPL WW

ACCESSION NR: AP5006772 S/0195/65/006/001/0048/0055

AUTHOR: Mikhaylov, A. I.; Lebedev, Ya. S.; Buben, N. Ya.

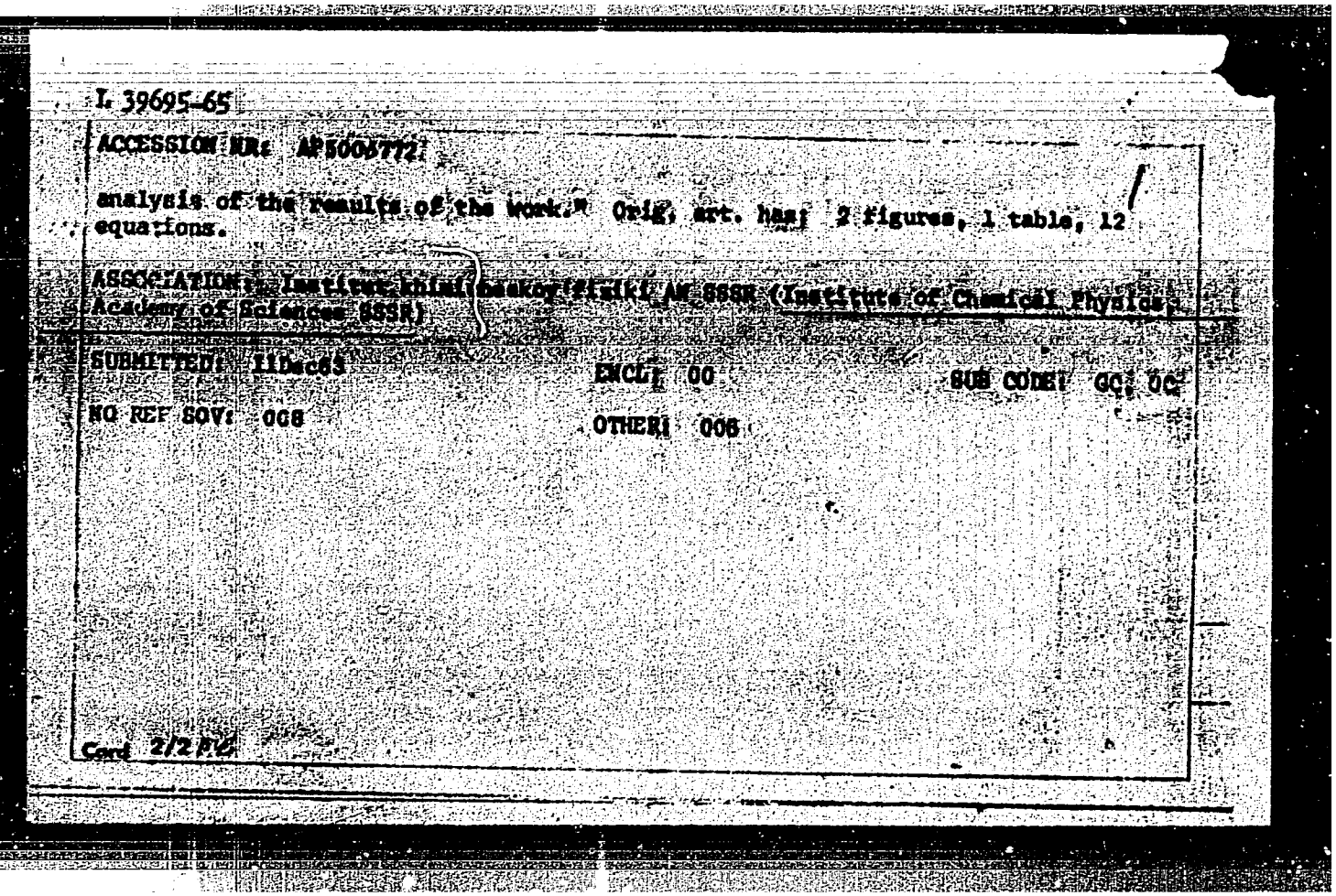
TITLE: "Step" recombination of free radicals in irradiated organic compounds. II. Examination of a formal-kinetic model and of a method of evaluating kinetic constants

SOURCE: Kinetika i kataliz, V. 6, no. 1, 1965, 48-55

TOPIC TAGS: recombination, recombination reaction, free radical, organic material

ABSTRACT: Several models of the "step" recombination of free radicals in a solid phase are discussed. The results of a formal-kinetic calculation are compared with experimental data. An experiment is proposed to permit judgment as to the spatial distribution of free radicals. The following hypothetical models are advanced to explain the origin of a quasi-stationary "step" in the recombination of radicals in a solid phase: 1) radicals located in zones (crystallites) with different softening temperatures; 2) radicals fixed in traps with different energies of stabilization; and 3) the probability of the recombination of a pair of radicals depends on the distance between them. "In conclusion the authors consider it their pleasant duty to express gratitude to V. V. Voyevodskiy and Yu. M. Molin for their frequent

Card 1/2



L 39695-65

ACCESSION NR: AP5006772

analysis of the results of the work." Orig. art. has: 2 figures, 1 table, 12 equations.

ASSOCIATION: Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, Academy of Sciences SSSR)

SUBMITTED: 11Dec63 ENCL: 00 SUB CODE: GC, OC

NO REF SOV: 008 OTHER: 006

Card 2/2 FC

L 2279-66 EWT(m)/EPA(w)-2/EWA(m)-2 IJP(c) DM

ACCESSION NR: AP5016923 UR/0089/65/018/006/0555/0559

621.384.611

AUTHOR: Kazanskiy, G. S.; Mikhaylov, A. I.; Rubin, N. B.; Tsarenkov, A. P.

TITLE: Phase bunching of a beam of charged particles during capture in the acceleration process in the OIYaI proton synchrotron

SOURCE: Atomnaya energiya, v. 18, no. 6, 1965, 555-559

TOPIC TAGS: particle acceleration, bev accelerator, cyclic accelerator, proton accelerator, proton beam

ABSTRACT: A method for increasing the capture by turning on beforehand a high-frequency accelerating field is proposed. The frequency of the accelerating field is varied to match deflection of the orbit in the "quasi-betatron" mode. The capture efficiency is thus increased by bunching the particles in an azimuthal direction. This bunching consists of drawing into the capture process some of the particles which under normal conditions would be outside the stability region. The application of the high-frequency field prior to the injection of the particles produces a phase bunching effect. The efficiency of the phase bunching depends on the width of the energy spectrum and on the angular spread of the injected beam. This phase bunching mode is relatively critical to the tuning. A frequency deviation by

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L 2279-66

ACCESSION NR: AP5016923

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0.3% offsets any gain that can be obtained from the capture. Calculation of the bunching effect are presented, and it is concluded that the results can be employed in accelerators designed for long-duration and many-turn injection. "The authors thank A. B. Kuznetsov for a useful discussion and advice, and also G. A. Bekov, G. P. Puchkov, and S. N. Turov of the radio division of LNE OIYaI (Laboratory of High Energy, Joint Institute of Nuclear Research) for help with the investigations of the accelerator mode." Orig. art. has: 6 figures and 6 formulas.

ASSOCIATION: none

SUBMITTED: 24Jun64 ENCL: 00 SUB CODE: NP

NR REF SOV: 003 OTHER: 000

Card 2/2 DP

L 49256-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pab-10/Pt-7 IJP(c)

ACCESSION NR: AP5010799 UR/0057/65/035/004/0623/0629

AUTHOR: Kazanskiy, G.S.; Mikhaylov, A.I.; Tsarenkov, A.P. 36 B

TITLE: Particle beam intensity stabilization in the OIYaI synchrophasotron III 19

SOURCE: Zhurnal tekhnicheskoy fiziki, vo. 35, no. 4, 1965, 623-629

TOPIC TAGS: synchrophasotron, beam control, beam instability, proton accelerator, proton beam

ABSTRACT: The authors discuss the means employed for stabilizing the proton dose per pulse on the experimental target when working with the 10 GeV synchrophasotron of the Joint Institute for Nuclear Research. The beam is extracted by programed variation of the amplitude, frequency, and phase of the high frequency accelerating potential. Stabilization is effected by one of two general methods, depending on the nature of the experiments. In stabilization "from below" a signal proportional to the decreasing intensity of the primary proton beam produces a pulse, when it reaches a predetermined level, which interrupts the process of changing the intensity of the primary beam. The excess beam is either wasted or directed to another experiment. In stabilization "from above" the beam is monitored at the experi-

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ACCESSION NR: AP5010799

mental target itself. The automatic monitoring and beam switching system makes it possible to direct portions of the beam to several experimental targets during each acceleration cycle. A brief theoretical discussion is given of the operation of the control system. It is concluded that a stability of 10% for small intensities can be achieved only by preliminary stabilization of the intermediate intensities, that inequalities in the extraction due to nonuniformity of the particle bunch and ripple in the magnetic field strength have a significant influence, and that delays in the control circuits must be minimized. Orig. art. has: 7 formulas and 4 figures.

ASSOCIATION: None

SUBMITTED: 01Jul64 ENCL: 00 SUB CODE: NP

NR REF SOV: 006 OTHER: 000

Card 2/2

L 2930-66 EWT(m)/EPF(c)/EWP(j)/T RPL WW/JWD/RM UR/0020/65/164/001/0140/0143

ACCESSION NR: AP5023371

AUTHORS: Mikhaylov, A. I.; Gaponova, I. S.; Lebedev, Ya. S.

TITLE: Migration of radical groups in the solid phase

SOURCE: AN SSSR. Doklady, v. 164, no. 1, 1965, 140-143

TOPIC TAGS: free radical, radical migration, epr spectroscopy, free radical formation, free radical generation

ABSTRACT: The migration of free radicals in several organic powders was investigated. The radicals were generated on the surface of the powders by means of a high frequency Tesla coil discharge, and the accumulation of free radicals was observed by epr spectroscopy. The experimental results are presented graphically (see Fig. 1 on the Enclosure) and are compared with a theoretical expression for the accumulation of free radicals. The theoretical expression

$$\frac{n}{n_s} \simeq \frac{l_0}{L} th(n_s k_2 t) + \mathrm{Re}\left\{\frac{\lambda}{L}\sqrt{k_m(t-\tau_0)}\right\}$$

is derived on the assumption that the migration of valence takes place via a "hopping" mechanism and that the radicals decay according to a second order rate law. Here n and n_s are the total and the limiting surface concentration of free

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L 2930-66

ACCESSION NR: AP5023371

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radicals respectively, l_s is the depth at which ionizing electrons give rise to free radicals, L the specific surface area, λ - the lattice constant, k_2 - the second rate constant for radical decay, K_m - the hopping frequence, $\tau_s = 1/k_2 n_s$ and t the time. It is concluded that the observed results are best explained in terms of a free radical migration mechanism. Values for estimated migration rates of free radicals, the limiting concentration n_s, depth of migration for a period of 1 hour, and K_m for a number of organic powders are tabulated. Orig. art. has: 1 table and 3 graphs.

ASSOCIATION: Institut khimicheskoy fiziki, Akademii nauk SSSR (Institute for Chemical Physics, Academy of Sciences SSSR)

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SUBMITTED: 11Feb65 ENCL: 01 SUB CODE: OC, SS

NO REF SOV: 012 OTHER: 004

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L 2930-66

ACCESSION NR: AP5023371

ENCLOSURE: 01

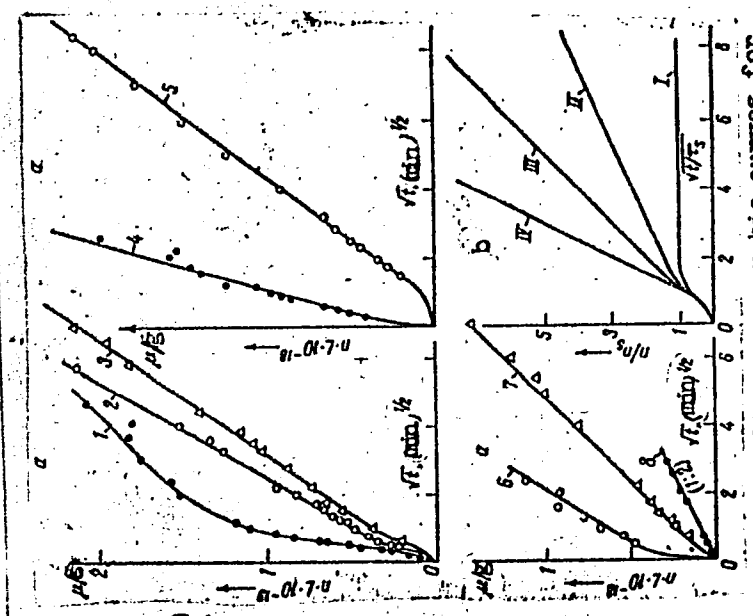

Fig. 1. a- linear anamorphic curves for radical accumulation during surface generation in different organic compounds. 1- paraffin, 2- stearic acid, 3- polyethylene, 4- uracil, 5- thymine, 6- glycine, 7- phenol, 8- benzene; b- theoretically calculated for $\lambda/L\sqrt{k_m T_s}$: I - 0; II - 0.5; III - 1; IV - 2.

Card 3/3

L 2?126-66 EWT(m)/EWP(1) IJP(c)
ACC NR: AP6001565 SOURCE CODE: UR/0120/65/000/006/0023/0026

AUTHOR: Issinskiy, I. B.; Kazanskiy, G. S.; Mikhaylov, A. I.; Myznikov, K. P.; Omel'chenko, B. D.; Tsarenkov, A. P.

ORG: Joint Nuclear Research Institute (Ob"yedinennyy institut yadernykh issledovaniy)

TITLE: Programing the operation of the OIYaI proton synchrotron for physical experiments 19

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1965, 23-26 51 B

TOPIC TAGS: synchrotron, proton beam, computer programming

ABSTRACT: Two types of proton-synchrotron operation are usually required for physical experiments at OIYaI: (1) Short (50—500 μsec) bursts of particles for bubble-chambers and (2) longer (up to 200 msec) pulses for counters. A programing system was developed which consists of a 7-channel operation-sequence unit, a command unit, a target-control unit, field sensors, a supply-control unit, and function manipulators. Several methods are envisaged for slow and fast application of the beam to various targets. Only block diagrams and short explanations are presented. Orig. art. has: 4 figures.

SUB CODE: 18, 09 / SUBM DATE: 20Oct64 / ORIG REF: 006

Card 1/1 PB UDC: 621.384.66

L 26650-66 EWT(1)/EWP(m)/EWT(m)/ETC(f)/EPF(n)-2/EWG(m)/EWA(d)/T/ETC(m)-6/EWA(1)

ACC NR: AP6007181 WW/DJ SOURCE CODE: UR/0170/66/010/002/0158/0163

AUTHORS: Mikhaylov, A. I.; Kalinin, E. K.; Yarkho, S. A.

ORG: Moscow Aviation Institute im. Sergo Ordzhonikidze (Aviatsionnyy institut)

TITLE: A study of heat exchange and hydraulic resistance of the viscous-gravitational flow of water in horizontal tubes with q_w = const

SOURCE: Inzhenerno-fizicheskiy zhurnal, v. 10, no. 2, 1966, 158-163

TOPIC TAGS: viscous flow, Reynolds number, laminar flow, metal tube, heat transfer, Prandtl number, Nusselt number, hydraulic resistance, heat transfer rate

ABSTRACT: The effect of free convection on the viscous flow of water is investigated experimentally in horizontal steel tubes under the condition q_w = const. The experiments are carried out for three Reynolds numbers: 840, 1170, and 1600. The results are plotted as Nusselt number and hydraulic resistance $\bar{\zeta} = \zeta \mathrm{Re}/(\mu_c/\mu_w)^{0.14}$ versus the product of Grashoff and Prandtl numbers. Empirical equations are obtained to describe the data within 10%. These equations are: for the heat transfer

$$\overline{\mathrm{Nu}} = 1{,}64\,(\overline{\mathrm{Pe}}\,d/L)^{1/4}[C_1(\overline{\mathrm{Gr}}\cdot\overline{\mathrm{Pr}})^{n}],$$

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L 26650-66

ACC NR: AP6007181

$$\begin{cases} C_1 = 1;\ n = 0 & \text{at} & \overline{Gr}\cdot\overline{Pr} < 2\cdot10^5, \\ C_1 = 0{,}293;\ n = 0{,}1 & \text{at} & 2\cdot10^5 < \overline{Gr}\cdot\overline{Pr} < 10^7, \\ C_1 = 0{,}000464;\ n = 0{,}5 & \text{at} & 10^7 < \overline{Gr}\cdot\overline{Pr} < 3\cdot10^7, \end{cases}$$

and for the hydraulic resistance

$$\xi = (64/\overline{Re})\,(\mu_{cr}/\mu_w)^{0.14}\,[C_2(\overline{Gr}\cdot\overline{Pr})^n],$$

$$\begin{cases} C_2 = 1;\ n = 0 & \text{at} & \overline{Gr}\cdot\overline{Pr} < 2\cdot10^5, \\ C_2 = 0{,}415;\ n = 0{,}07 & \text{at} & 2\cdot10^5 < \overline{Gr}\cdot\overline{Pr} < 10^7, \\ C_2 = 0{,}002;\ n = 0{,}4 & \text{at} & 10^7 < \overline{Gr}\cdot\overline{Pr} < 3\cdot10^7. \end{cases}$$

It is shown that, other conditions being equal, the average heat transfer rate for the case q_w = const is higher than for the case T_w = const if the product of the Grashoff number and the Prandtl numbers is less than 3×10^6. Orig. art. has: 4 equations and 4 figures.

SUB CODE: 20, 13/ SUBM DATE: 10May65/ ORIG REF: 005/ OTH REF: 002

Card 2/2

MIKHAYLOV, A. I.

Novyi sposob prioliznennogo opredeleniia udlineniia metallov.
(Vestnik metallopromy-shlennosti, 1939, v. 19, no.7, p.71)

Title tr.: A new approximate method for measuring the percentage of elongation of metals at fracture.

TNE.VL 1939

SO: Aeronautical Sciences and Aviation in the Soviet Union, Library of Congress, 1955.

26(1,4) PHASE I BOOK EXPLOITATION SOV/2396

Akademiya nauk SSSR. Laboratoriya dvigateley

Teoriya, konstruktsiya, raschet i ispytaniye dvigateley vnutrennego sgoraniya (Theory, Construction, Design, and Testing of Internal Combustion Engines) Moscow, Izd-vo AN SSSR, 1957. 209 p. (Series: Its: Trudy, vyp. 3) Errata slip inserted. 4,000 copies printed.

Ed. of Publishing House: V. M. Klennikov; Tech. Ed.: A. A. Pavlovskiy; Editorial Board: M. D. Apashev, Doctor of Technical Sciences, K. G. Yevgrafov, V. A. Lur'ye, Candidate of Technical Sciences, and Yu. B. Sviridov, Candidate of Technical Sciences.

PURPOSE: This book is intended for technical personnel working with internal combustion engines.

COVERAGE: This collection of scientific papers deals with internal combustion engines. The book is divided into three parts. The first part deals with gas turbines, the second with reciprocating internal combustion engines, and the third with

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methods and equipment for investigations. No personalities are mentioned. References follow each article.

TABLE OF CONTENTS:

Theory (Cont.)

The author made a comprehensive investigation of the efficiencies of two diesel engines, a standard engine with a stroke-bore ratio of 1.2, and a short-stroke engine with a stroke-bore ratio of 0.8. The results showed significant advantages of the short-stroke engine as compared to the standard one.

PART I. GAS TURBINES

PART II. RECIPROCATING INTERNAL COMBUSTION ENGINES

gases on temperature and pressure. On the basis of the principles of theoretical thermodynamics he derives equations for calculating correction values for heat capacities at high temperature and pressure.

of combustion during propagation of the flame over the working substance. He describes the temperature field in the combustion chamber and its variation during the combustion process. He also presents an analytical method and an example for calculating various parameters of the indicator diagram.

PART III. METHODS AND EQUIPMENT FOR INVESTIGATION

Lebedinskiy, A.P. Methods of Road-testing Automobile Engines 19
The author describes a method of road testing in which braking of the automobile tested is accomplished by a towing automobile. According to the author, this method makes it possible to regulate the braking intensity in a wide range of speeds and load. It is also recommended as an effective method for replacing stand tests in many cases.

AVAILABLE: Library of Congress

AUTHOR: Mikhaylov, A. I. (Moscow). 24-1-13/14

TITLE: Prospects of utilizing atomic energy in closed-cycle gas turbine plant. (Perspektivy ispol'zovaniya atomnoy energii v gazoturbinnykh silovykh ustanovkakh zamknutogo tsikla).

PERIODICAL: Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk, 1958, No.1, pp. 116-119 (USSR).

ABSTRACT: The results are described of a comparative analysis of two-cycle atomic closed cycle gas turbines with helium cooling of the reactor utilising as the operating medium helium, nitrogen or CO_2. The information discussed in this paper is based almost exclusively on published American and British information.
There are 7 figures and 11 references, all of which are English.

SUBMITTED: September 21, 1957.
ASSOCIATION: Engine Laboratory Ac.Sc. USSR(Laboratoriya Dvigateley Akademii Nauk SSSR).
AVAILABLE: Library of Congress.

Card 1/1

SOV: 30-58-10-19/34

AUTHOR: Mikhaylov, A. I., Doctor of Technical Sciences

TITLE: The Congress of "International Days of Gas Turbines" (Kongress "Mezhdunarodnyye dni gazovykh turbin")

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 10, pp 79-80 (USSR)

ABSTRACT: The congress took place in Mons, Belgium, from June 4 to 6 and was convened by the Polytechnic Institute. Representatives of the following countries participated in the congress: Austria, United Kingdom, Belgium, German Democratic Republic, Netherlands, Denmark, Spain, Italy, Luxembourg, Poland, USSR, France, German Federal Republic, Switzerland, Sweden, and Japan. The reports at the congress dealt with problems of using and introducing gas turbines in various branches of industry and transportation. Only reports of Western scientists are mentioned. The author of this article considers the reports of the Escher-Wyss Company (Esher-Viss) (The Use of Gas Turbines in Atomic Power Plants With Gas Cooled Atomic Reactors) and of the Sulzer Company (Zul'tser) (The Use of a Combined Set-Up as Blast Engine of Blast Furnaces and Power Generator), both of Switzerland, as highly interesting. Furthermore, the author notes that scien-

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The Congress of "International Days of Gas Turbines" SOV 30-58-10-18/54

tific research in this field is carried out on a high level and a broad basis in the West.

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