

Drift of ionized meteor trails

S/202/62/000/001/002/006
E032/E314

height, except for a maximum at about 89 - 91 km. Eastward drift is found to predominate. Some cases of opposite drift directions occurring over short periods of time were observed and are taken to indicate the presence of turbulent processes in the upper stratosphere. There are 5 figures and 3 tables.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN Turkmenskoy SSR
(Physicotechnical Institute of the AS Turkmen SSR)

SUBMITTED: July 16, 1962

Card 2/2

SAVRUKHIN, A.P.

Observation of an artificial sodium comet in Ashkhabad
on September 12, 1959. Trudy fiz.-tekh. inst. AN Turk.
SSR-8:223-228 '62. (MIRA 15:11)
(Ashkhabad--Artificial satellites--Optical observations)

SAVRUKHIN, A.P.

Observation of meteors of Perseid shower in August 1961.
Astron.tsir. no.226:10-11 0 '61. (MIRA 16:1)

1. Astrofizicheskaya laboratoriya Fiziko-tekhnicheskogo
instituta AN Turkmenskoy SSR.
(Meteors—August)

BELOUS, A.T.; INOZEMTSEV, Yu.A.; LYUBARSKAYA, A.G.; SAVRUKHIN, A.P.

Number of meteorites recorded annually by radar and its changes
as observed in Ashkhabad in 1959. Izv.AN Turk.SSR.Ser.fiz.-tekh.,
khim.i geol.nauk no.1:24-29 '62. (MIRA 16:12)

1. Fiziko-tehnicheskly institut AN Turkmenskoy SSR.

SAVRUKHIN, A.P.

First photographs of ionization tracks of meteorites in the U.S.S.R.
Izv. AN Turk. SSR. Ser. fiz.-tekh., khim. i geol. nauk no. 1:127-128 '62.
(MIRA 16:12)

1. Fiziko-tekhnicheskiy institut AN Turkmenskoy SSR.

NASYROVA, L.I.; SAVRUKHIN, A.P.

Drift of meteor trails according to visual observations at
Ashkhabad in 1959 and 1960. Izv.AN Turk.SSR.Ser.fiz.-tekh.,
khim.i geol.nauk no.3:27-31 '63. (MIRA 17:3)

1. Fiziko-tehnicheskii institut AN Turkmenskoy SSR.

L 8612-65 EWT(1)/EWG(v)/EWA(d)/EEC-4/EEG(t) Pe-5/Pae-2 AFETR/SSD/BSD/
APWL/ESD(t) GW
ACCESSION NR: AR4038685 2/0269/64/000/003/0067/0067

SOURCE: Ref. zh. Astron. Otd. vy*p., Abs. 3.51.502

AUTHOR: Savrukhin, A. P.

TITLE: Drift of ionized meteor trails in August 1950-1956

CITED SOURCE: Byul. Komis. po kometam i meteoram Astron. soveta AN SSSR, no. 8, 1963, 45-50

TOPIC TAGS: astrophysics, meteor astronomy, astronomy, meteor, meteor trail, upper atmosphere, Perseids meteor stream, meteor stream, meteor trail drift

TRANSLATION: This paper presents the results of processing of visual observations of the drift of 58 meteor trails in the Perseids stream. The mean value of the drift velocity was 58 m/sec. The error in determination of drift velocity was linearly dependent on the drift velocity itself. The results of determination of drift direction are compared with data obtained by radar observations of meteors. Bibliography of 6 items. P. Babadshyanov

DATE ACQ: 17Apr64

SUB CODE: AA

ENCL: 00

Card 1/1

ACCESSION NR: AP4033419

S/0202/64/000/001/0121/0124

AUTHORS: Savrukhin, A. P., Nasyrova, L. I.

TITLE: Drift of meteoric trains observed visually in Ashkabad, 1961

SOURCE: AN TurkmSSR. Izvestiya. Seriya fiziko-tekhnikeskikh, khimicheskikh i geologicheskikh nauk, no. 1, 1964, 121-124

TOPIC TAGS: meteoric train, train drift, train height, drift velocity, drift direction, binocular TZK

ABSTRACT: Drifts of meteoric trains (observed by A. P. Savrukhin in August 1961) were studied in order to complete earlier investigations of winds at high altitudes. A binocular telescope TZK with an objective aperture of 80 mm and a field of vision of 8° was used. In all, 22 meteors were observed, 20 of them belonging to the Perseid stream. Data were processed by the method developed by A. P. Savrukhin (Izvestiya AN TSSR, seriya FTKhGN, No. 1, str. 15, 1963). Over 70 drift vectors were calculated. Drift heights ranged from 81 to 108 km, their velocities from 0 to 132 m/sec, and their astronomic azimuths from 9 to 352°. The velocities of 75% lay within the range 0-60 m/sec, with a mean value of 34 m/sec. Smallest drift

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ACCESSION NR: AP4033419

velocities were observed at the heights of 88-90 km, greatest at 96-99 km and at 83 km. Between 89 and 98 km the wind velocity gradient was +3.5 m/sec km. One half of the trains moved due SE. At 90-100 km the drifting proceeded in all directions, but below 90 km only the southward, southwestward, and northeastward movements were observed. In these cases the directions were seen to change, and in one case the drift followed a circular arc. Orig. art. has: 3 tables and 2 diagrams.

ASSOCIATION: Otdel geofiziki i seysmologii AN Turkmenskoy SSR (Department of Geophysics and Seismology, Academy of Sciences, Turkmen SSR)

SUBMITTED: 30Sep63

DATE ACQ: 28Apr64

ENCL: 00

SUB CODE: ME

NO REF SOV: 003

OTHER: 002

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8/0202/64/000/001/0127/0128

ACCESSION NR: AP1033420

AUTHOR: Savrukhin, A. P.

TITLE: Results of visual observations of meteoric trains, conducted in Odessa, August 1961

SOURCE: AN TurkmSSR. Izvestiya. Seriya fiziko-tekhnicheskikh, khimicheskikh i geofizicheskikh nauk, no. 1, 1964, 127-128

TOPIC TAGS: meteoric train, zenith distance, train azimuth, train drift, horizontal velocity, Perseids, train height, radiant, meteor cluster

ABSTRACT: Visual observations of meteor trains were conducted at Odesskaya astronomicheskaya observatoriya (Odessa Astronomical Observatory) by M. N. Zarubin, E. P. Perevalova, S. V. Tikhomirova, Yu. A. Chernikov, and E. L. Shishmareva, under the guidance of Ye. N. Kramer. Binocular telescopes (6^o, X8) were used to determine the zenith distance z and azimuth a . Duration of drifting τ (in seconds), amount of drift λ (in degrees), and positional angle of drift γ were determined. The horizontal velocity of drift and drift azimuth were computed

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from formulas

$$v = H \cdot \frac{\lambda}{r} \cdot \frac{\cos \gamma}{\cos z} \cdot \sqrt{\sec^2 z + \operatorname{tg}^2 \gamma}$$
$$A = a + \alpha, \operatorname{tg} \alpha = -\operatorname{tg} \lambda \cdot \cos z.$$

All trains were produced by Perseids. Their heights H (km) were determined from the known stellar magnitudes m of the meteors and from the zenith distance of the meteor cluster. Drift velocities were found to exceed 0.10-0.11 km/sec. All drifts proceeded either due south or due northwest. For the data see Table 1 of the Enclosure. Orig. art. has: 2 equations and 1 table.

ASSOCIATION: Otdel geofiziki i seismologii AN Turkmenskoy SSR (Department of Geophysics and Seismology, AN Turkmen SSR)

SUBMITTED: 25Sep63

DATE ACQ: 28Apr64

ENCL: 01

SUB CODE: ME

NO REF SOV: 001

OTHER: 000

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ACCESSION NR: AP4033420

ENCLOSURE: 01

Table 1. Drifts of meteoric trains.

1	2	3	4	<i>m</i>	<i>z</i>	<i>a</i>	<i>γ</i>	<i>λ</i>	<i>γ</i>	<i>H</i>	<i>v</i>	<i>A</i>
Номер станции	Дата	Мин. Вр.										
1	август 11 ^d	23 ^h 37 ^m	-1,0	71°	141°	75	1°2	285°	96,5	0,102	12°	
2	12	21 10	0,0	75	221	27	0,9	25	100,0	0,665	34	
3	13	00 15	0,0	42	210	22	0,9	50	98,5	0,122	348	
4	13	00 19	0,5	36	180	57	3,0	30	97,5	0,123	224	
5	13	21 10	0,0	65	213	110	1,8	220	100,5	0,135	193	
6	13	21 10	0,0	74	218	90	1,8	230	100,0	0,138	200	

1. Train No. 2. Date. 3. August. 4. Universal time.

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SAVIAZHIN, V.I.

number and telegrams in the reference book. All Turk.
Sci. Ser. Fiz.-tekh., zhiv. i geol. Nauk n. 5:132-139. 1961.
(MIRA 17:12)

1. Astrofizicheskaya laboratoriya otzela geofiziki i seysmologii
AN Turkmenskoy SSR.

SAVRUKHIN, A.P.

Altitudes of meteor trails. Izv. AN Turk. SSR. Ser. fiz.-tekh.,
khim. i geol. nauk no.6:122-123 '64. (MIRA 18:4)

1. Astrofizicheskaya laboratoriya Otdela geofiziki i seysmologii
AN Turkmenstoy SSR.

L 40907-65 EWI(1)/EWG(v)/FCC/EWA(d)/EEC-4/EEC(t)/EWA(h) Po-4/Pe-5/Pq-4/Pae-2/
ACCESSION NR: AT5009258 UR/2831/64/000/013/0158/0161

AUTHOR: Savrukhn, A. P. Feb/P1-4 GW

39
B+1

TITLE: Study of winds in the lower ionosphere by means of visual optical observations of the drift of meteor trails

SOURCE: AN SSSR. Mezhdudomstvennyy geofizicheskiy komitet. V razdel programmy MGG: Ionosfera. Sbornik statey, no. 13, 1964, 158-161

TOPIC TAGS: lower ionosphere, ionospheric wind, meteor trail, meteor trail drift

ABSTRACT: The article presents some results of visual optical observations of the drift of gaseous meteor trails during 1950 to 1956 in the area of Ashkhabad. Measurements of the velocity distribution of the drift confirmed the hypothesis that, in the investigated altitude range, there are relatively quiet boundary surfaces between which atmospheric currents move at velocities of 60 to 80 m/sec. A study of the directional distribution of the drifts gave the direction as E-SE-S in 67% of the cases, the velocities in these directions being much greater than in other directions. The presence of a steady wind of

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L 40907-65

ACCESSION NR: AT5009258

high velocity was clearly manifested at points distant 5000 km from one another. Turbulent phenomena in the lower ionosphere are discussed; from 74 trails, the size and altitude of eight winds were determined. Orig. art. has: 3 figures and 1 formula.

ASSOCIATION: None

SUBMITTED: 00

ENCL: 00

SUB CODE: ES

NO REF SOV: 005

OTHER: 004

llc
Card 2/2

L 52698-65 EWT(1)/EWG(7)/FCC/EWA(d)/EEC-4/EEC(t)/EWA(h) Po-4/Pe-5/Pq-4
Pae-2/Pe-4/Pi-4 GW

ACCESSION NR: AT5011857

UR/2556/64/000/035/0037/0039

AUTHOR: Savrukhin, A. P. (Ashkhabad)

43
42
B-1

TITLE: Morphology of meteoric trails

SOURCE: Vsesoyuznoye astronomo-geodezicheskoye obshchestvo, Byulleten', no. 35, 1964, 37-39

TOPIC TAGS: meteoric trail, trail type, upper atmosphere, kinematic state

ABSTRACT: The morphology of meteoric trails was first studied by V. V. Fedynskiy from observational data at the Tadzhik Astronomical Observatory. He described five types of trails. Later Olivier and Millman gave new descriptions of trail types. Savrukhin criticized the previous types and introduced his own classification on the basis of his observational data. He introduced six types of trails which are denoted with letters with the following meanings: S — spiral shape indicating atmospheric flows with different velocities; C — curved shape and indicates one atmospheric flow; R — annular shape which indicates atmospheric flow with changing directions; L —

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L 52698-65

ACCESSION NR: AT5011857

strip shape characterizing the upper atmosphere in a quiet state; B — an accumulation or contraction of the trail; T — tube shape. S, C, R, and L types characterize the kinematic state of the upper atmosphere, and B and T types show the decay of the trail. A table represents the frequency of appearance of various types of trails. S and C are the more frequent types. Trail accumulations were registered in about 22% of the observations made. Orig. art. has: 1 table and 2 figures. [EG]

ASSOCIATION: Ashkhabadskoye otdeleniye VAGO (Ashkhabad Section, VAGO)

SUBMITTED: 00Nov63

ENCL: 00

SUB CODE: AA

NO REF SOV: 004

OTHER: 002

ATD PRESS: 4012

DR
Card 2/2

SAVRUKHIN, A.F.

Altitude profile of the drift velocities of meteor trails. Izv. AN
Turk. SSR. Ser. fiz.-tekh., khim. i geol. nauk no.1:127-128 '65.
(MIRA 18:7)
1. Astrofizicheskaya laboratoriya otdela geofiziki i seysmologii AN
Turkmenskoy SSR.

L 47385-66 EWT(1)/FCC GW

ACC NR: AR6028408

SOURCE CODE: UR/0269/66/000/005/0070/0070

AUTHOR: Savrukhin, A. P.

46B

ORG: none

TITLE: Winds in the upper atmosphere according to photographic observations of the drift of the train

SOURCE: Ref. zh. Astronomiya, Abs. 5.51.561

REF SOURCE: Byul. Komis. po kometam i meteoram Astron. soveta AN SSSR, no. 12, 1965, 27-30

TOPIC TAGS: meteor stream, meteor observation, upper atmosphere, drift, trail, meteor trail, photographic observation

ABSTRACT: On the basis of photographic observations during the periods of Perseids and Orionids meteor streams (August and October 1960-1962), drifts of 12 trains (altitude range 70-109 km) are calculated. Bibliography of 8 titles. [Translation of abstract] [DW]

SUB CODE 04/

Card 1/1 hs

UDC: 523.58

1 28006-66 EWT(1)/EWA(d) GW

SOURCE CODE: UR/0202/66/000/002/0125/0125

ACC NR: AP6018193

AUTHOR: Savrukhin, A. P.

27
B

ORG: Institute of Physics of the Earth and Atmosphere, AN TurkmSSR (Institut fiziki zemli i atmosfery AN TurkmSSR)

TITLE: Observations of the meteor streams Leonids in 1964 and Lyrids in 1965

SOURCE: AN TurkmSSR. Izvestiya. Seriya fiziko-tekhnicheskikh, khimicheskikh, i geologicheskikh nauk, no. 2, 1966, 125

TOPIC TAGS: meteor stream, meteor, meteor observation

ABSTRACT: The Leonids meteor stream was observed by E. S. Yushkevich during the period 14-17 November 1964. On the first night of observations the hourly number of meteors in the stream did not exceed three; on the following night there was an increase of the number of meteors, and on the night 16-17 November the stream attained an activity maximum: the hourly number exceeded 50. All the meteors of the stream left trails with luminescence having a duration of several seconds. During the period 21-23 April 1965 A. P. Savrukhin and L. I. Nasyrova observed the Lyrids meteor stream. On the night of 21-22 April the hourly number of meteors of the stream was 7 with a relative activity of 0.6. On the night of 22-23 April the hourly number decreased to 4 and the relative activity was 0.4. The mean brightness of the meteors of the stream was +2 stellar magnitude; for sporadic meteors it was +3 stellar magnitude. On the first night of the observations the drifts of three stable gas trails of meteors were recorded which indicated a northward movement at the mean level of heights. /JPRS/

SUB CODE: 03 / SUBM DATE: 10Sep65

Card 1/1 *pla*

UDC: 523.53

S/828/62/000/000/014/017
E071/E135

AUTHORS: Komissarova, L.N., Shatskiy, V.M., Zazubin, A.I.,
Savrukova, G.D., and Spitsyn, V.I., Academician.

TITLE: Separation of scandium from tungsten and poor
polymetallic iron ores

SOURCE: Razdeleniye blizkikh po svoystvan redkikh metallov.
Mezhvuz. konfer. po metodam razdel. blizkikh po svoyst.
red. metallov. Moscow, Metallurgizdat, 1962, 155-167.

TEXT: As a result of experiments carried out with tungsten
residues and slag, two methods of separation of scandium and
production of a pure scandium oxide (above 99.99%) with an overall
yield of 80-88% production, were developed. The first stage in
both is the transfer of scandium into solution. The best results
were obtained by treating the residues or slag with 98% sulphuric
acid, using a solid to liquid ratio of 1:1, a temperature of
220 °C up to a nearly complete removal of SO₃ vapour (> 4 hours)
and subsequent extraction with water. The solubility of Sc(OH)₃
in Na₂CO₃ solutions of various concentrations was studied at 0
and 25 °C. With increasing concentration of Na₂CO₃ the solubility
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Separation of scandium from tungsten... S/828/62/000/000/014/017
E071/E135

of $\text{Sc}(\text{OH})_3$ increases. The maximum solubility, 0.12 wt.% of $\text{Sc}(\text{OH})_3$, is obtained at 20 wt.% of Na_2CO_3 and 25 °C. The solubility of $\text{Sc}(\text{OH})_3$ in sodium hydroxide solutions in the range of concentration of 7-45 wt.% at 25 °C was determined. In the lower range of concentration of sodium hydroxide (up to 15 wt.%) the solubility of $\text{Sc}(\text{OH})_3$ is insignificant (~ 0.03 mg Sc_2O_3 per m³ of solution). The solubility was highest at 26 and 32.5 wt.% of NaOH, 1.28 and 1.5 mg of Sc_2O_3 per m³ of solution. The above studies were used as a basis for the two proposed methods of separation. The carbonate method, proposed for the processing of tungsten residues, comprises: transfer into solution with concentrated sulphuric acid, sodium carbonate treatment, extraction of thiocyanides and precipitation of oxalates. The alkali-carbonate method, proposed for the separation of scandium from slags (from the production of pig iron) comprises: sulphuric acid solution, precipitation with sodium hydroxide, carbonate treatment, extraction of thiocyanides and precipitation of oxalates. As a result of the carbonate treatment 40-70% Sc_2O_3 concentrates are obtained. The main admixtures are thorium, rare earth elements,
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Separation of scandium from tungsten... S/628/62/000/000/014/017
E071/E135

zirconium, titanium, aluminium and beryllium.
There are 2 figures and 7 tables.

Card 3/3

SAVITSKIY, A. I.

Investigating the system $\text{BeSO}_4 - \text{MgSO}_4 - \text{H}_2\text{O}$ at 25 and 60°.
Trudy Inst. met. i obog. AN Kazakh. SSR 14:9-14 '65.
(MIRA 18:10)

LAZUBIN, A.I.; SAVRUKOVA, G.D.

Studying solubility in the system $Sc_2(SO_4)_3 - Al_2(SO_4)_3 - H_2O$
at 25°. Trudy Inst. met. i obog. AN Kazakh. SSR 14:15-17 '65.
(MIRA 18:10)

SAVRYCH, V. A.

Savrych, V. A.

"The C- and P-vitamin activity of mother's milk (based on material from the Stanislav Lying-in-Home)." Kiev Order of Labor Red Banner Medical Inst imeni Academician A. A. Bogomolets. Kiev, 1956. (Dissertation for the Degree of Candidate in Medical Sciences).

Knizhnaya letopis
No. 21, 1956. Moscow

SAVSHINSKAYA, A. V.

Savshinskaya, A. V. - "On the clinical features and diagnosis of chorio-epithelium,"
Collection dedicated to the Maternity Hospital im. Snegireva on its 175th anniversary,
Leningrad, 1949, p. 249-56

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

SAVSHINSKAYA, A.V.

Use of neostigmine in stimulation of labor. Akush gin. No.1:18-
20 Jan-Feb 51. (CIML 20:5)

1. Of the Obstetric-Gynecological Clinic (Head of Staff--Prof.
M.A.Petrov-Maslakov), Leningrad Sanitary Hygienic Medical Insti-
tute, and of the Department of Pharmacology (Head--Honored Worker
in Science Prof.M.V.Lazarev), Naval Medical Academy.

SAVSHIN ~~SKA~~ / M, A. V.

8070. I. Allergic changes in the brain due to foreign albumin. II. Allergic changes in the brain due to placental albumin. A. V. Savshinskaya *Trud. Leningr. med. Inst.*, 1955, 18, 12 --26, 27--31; *Referat. Zh. Biol.*, 1956, Abstr. Nos. 88003, 88004. — I. Rabbits previously sensitised with diphtheria serum by i.v. or suboccipital injection were injected (suboccipitally or via carotid artery) with antigen. This was accompanied by an inflammatory reaction in the brain, with swelling of the vascular walls, perivascular infiltration, and formation of thrombi. Allergic changes were also found in other organs (liver, kidney).
II. Nine rabbits and one guinea pig were sensitised with the extract from a human placenta. The challenging injection was made suboccipitally. Changes in the vessels in the brain were found in the experimental animals (engorgement with blood, thrombi, and perivascular infiltration). Proliferation of Kupffer cells and engorgement with blood were found in the liver. Animals (6 guinea pigs and 2 rabbits) were sensitised with homologous placenta; the same morphological changes were observed. Since the pathological change in the animals sensitised with placenta were similar to that in eclampsia, eclampsia is considered an allergic condition. (Russian) J. E. S. BRADLEY

PETROV-MASLAKOV, M.A., prof.; DYMARSKIY, L.Yu., kand. med. nauk;
SAVSHINSKAYA, A.V.

Minutes of the 76th meeting of the Scientific Society of
Leningrad and Leningrad Province Oncologists held together
with the Leningrad Scientific Society of Obstetricians and
Gynecologists on March 13, 1963. Vop. onk. 9 no.9:120-122 '63.
(MIRA 17:9)

SAVSHINSKIY, A. I.

Intestinal and Parasitic Worms

Certain clinical symptoms in gastrointestinal tuberculosis in children with special reference to the younger group. Vop. pediat. i okhr. mat. i det. 20 no. 3, 1952.

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

SAVSHUK, O. YE.

USSR/General Problems of Pathology. Immunity

U-1

Abs Jour : Ref Zhur - Biol., No 14, 1958, No 65882

Author : Savshuk O. Ye.

Inst : Odessa University

Title : The Influence of Stimulation and Severance of Certain Parts
of the Nervous System Upon Immunogenic Functions in Rabbits

Orig Pub : Nauchn. yezhegodnik, Odessk. un-t, 1956, Odessa, 1957, 219.

Abstract : Rabbits were immunized with a culture of Brucella, strain No 19, after the wounds which had been caused by opening the skull and inserting gauze were healed, and also after the vagus and the sympathetic nerves were severed. In all cases the agglutinin titer (AT) was 2-6 times lower than in controls, and the phagocytosis reaction (PR) was decreased. The rabbits were revaccinated 1 year after receiving their initial immunization. The agglutinin titer was 1:1280 in the controls, and 1:160 to 1:640 in the experimental animals, whereas the PR remained the same in the controls and the experimental animals.

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HUNGARY

GADO, Istvan, SAVTCHENKO, Galina, HORVATH, Istvan; Research Institute for Pharmaceutical Chemistry, Department of Microbiology (head: HORVATH, I.) (Gyogyszeripari Kutato Intezet, Mikrobiologiai Osztaly), Budapest.

"Agar-Diffusion Method for the Screening of Anticancer Substances by Phage Induction."

Budapest, Acta Microbiologica Academiae Scientiarum Hungaricae, Vol VII, No 4, 1965/66, pages 363-365.

Abstract: [English article, authors' English summary modified] A simple, semi-quantitative agar diffusion method was worked out for the screening of anticancer substances by phage induction which is suitable for mass examinations. The method is based on the following. A solid medium is infected with an appropriate mixture of the lysogenic and indicator strains; under the influence of active compounds, the number of plaques is significantly increased in the surroundings of the wells made in the agar plate. 1 Hungarian, 5 Western references. [Manuscript received 23 Aug 65.]

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AUTHORS: Fedyunin, D.L. and Savtsov, N.Z. SOV/138-58-11-11/14
TITLE: Apparatus and Method for Testing Foam Rubber by
Compression (Pribor i metod dlya ispytaniya gubchatoy
reziny na szhatiye)
PERIODICAL: Kauchuk i Rezina, 1958, ¹Nr 11, pp 35 - 36 (USSR)
ABSTRACT: Foam-rubber samples in the form of cylinders 35 mm dia
and not more than 50 mm high are placed between the two
plattens of the measuring apparatus shown in Figures 1
and 2. The upper platten, connected to the dial gauge,
is allowed to rest on the sample under its tare weight
of 40 g. (If the sample has a s.g. less than 0.2, the
upper platten is lowered by hand till it just touches
the sample.) The initial thickness is then determined
as the sum of the dial gauge reading and the reading of
the thimble micrometer connected to the lower platten.
Compression test results may be expressed either as the
load necessary to compress the sample to 60% of its
initial thickness or as the compression given by a further
load of 500 g applied to the upper platten on the platform

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SOV/138-58-11-11/14

Apparatus and Method for Testing Foam Rubber by Compression

above the dial gauge. In the latter case, the height of the specimen is measured as the sum of the two micrometer readings two minutes after the load is applied. Specimens are trepanned with the special cutter shown in Figure 3. The cutter is lubricated with water while cutting and the specimens must be thoroughly dried before measurements are taken. There are 3 figures.

ASSOCIATION: Nauchno-issledovatel'skiy institut rezinovykh i lateksnykh izdeliy (Scientific Research Institute for Rubber and Latex Products)

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S/121/61/000/005/002/005
D040/D112

AUTHORS: Tarasinkevich, P.P., Mosenkis, M.G., and Savtsov, Yu.A
TITLE: Program controlled automatic turret lathe
PERIODICAL: Stanki i instrument, no. 5, 1961, 8-13

TEXT: The design and operation of the 1341 $\overline{\overline{\text{P}}}$ (1341P) lathe (Fig. 1) is described in detail. It is produced by the Kiyevskiy zavod stankov-avtomatov (Kiyev Automatic Machine Tool Plant) and is a modification of the "1341" lathe produced since 1958. Some of the component units are new, some changed. The drum type capstan head with 16 tool seats is mounted parallel to the machine spindle and fixed in the various positions by a wedge pin that is retracted by an electromagnet for release. Separate reversible electric motors and electromagnetic friction clutches are used for rapid capstan head turns and longitudinal run of the carriage saddle. Cutting feed is from the change gear box (Fig. 2) with a two-speed motor (1), four electromagnetic clutches (2) and a double-rim gear, producing altogether two series of eight (each) automatically changing feeds (3). Usual multidisc electromagnetic clutches are used for cross feed and rapid

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D040/D112

Program controlled automatic...

head turns. Longitudinal feed and fast run of the carriage saddle is from special electromagnetic gear clutches working fast with high torque (fluctuations of the uncoupling time are not above 0.01 sec.). The workpiece clamping and feed mechanism is actuated by a pump-like unit in the machine frame, mounted with its motor on a hydraulic panel. The hydraulic system (Fig. 3) is shown in position "rod is clamped, pressure rising" (drain is not shown in diagram). It works automatically as follows: after the command "rod feed", an electromagnet (2) is switched on; a slide valve (3) moves right and oil flows into the releasing and rod-feed spaces; after completed feed, pressure in the feed space rises, and a pressure relay (6) switches off the electromagnet of the slide valve (3). Now oil moves into the right space in a cylinder (7) for clamping, then the pressure in it rises and oil under the left end of another slide valve (5) moves it right and opens the way to the right space in a feed cylinder (8). Increasing pressure is applied to the workpiece. A pressure relay (4) then gives the command for cutting. Oil flows through a drain valve (1) to lubricate the change gear box. Pressure in the system is 12 Kg/cm². Spaces between the slide valves and their bushings are large (0.04-0.06 mm, in diameter) to ensure smooth operation without fine oil filters. All motions are produced by electrically controlled mechanisms, and the program is contained on a single 185x278 mm Card 2/12

S/121/61/000/005/002/005
D040/D112

Program controlled automatic...

punched card of hard paper with 77 horizontal lines (sufficient for most complicated setting) and 20 vertical columns, six of which are designed for fixing coded numbers of revolution and feeds (decoding is indicated on the card margin), and other cards for noncoded commands. The punched card is prepared as for usual turret lathes and serves for work of identical shape and different dimensions. The data determining work dimensions are on a feedback transmitter of the machine elements' position, or "magnetic stops unit" ("blok magnitnykh uporov"), developed at the Institut avtomatiki Gosplana USSR (Automation Institute of the Gosplan UkrSSR). Its program carrier is a silver-coated brass drum with a ferromagnetic compound on its surface. The combination of two program carriers (punched card and position feedback transmitter) controls the machine automatically. The magnetic stops' accuracy is 0.02 mm, work length is accurate within 0.1 mm. The lathe operator produces the first piece by manual control and "records the stops" on the magnetic drum. Program is changed by replacing the punched card, wiping the drum and making a new record. The two units together constitute one major component called a "command unit" ("kommandoapparat"). The card is placed on the brass drum, which has 20 brushes, which can contact the card only through the card perforations. Intermediate relays coupled with the brushes transmit the command readings.
Card 3/12

S/121/61/000/005/002/005
D040/D112

Program controlled automatic...

A step-by-step device makes the drum turn. The kinematic system is given (Fig. 6). The punched card drum (2) mounted on a shaft (25) on insulating bushings is coupled with a gear (23) through a spline bushing (33). The drum (2) is coupled with the magnetic drum (29) through gears (23), (26), and (27) with a 1:1 ratio. When the carriage saddle runs or the capstan head turns, a tie rod (30) moves a carriage (31) with a magnetic head (32) along the magnetic drum. A run-electromagnet (ЭМХ) switches on and turns a lever (17) on its axle (13) as indicated by an arrow (K); the pawl on the lever turns a ratchet wheel (16), and a Geneva cross movement (14). A ball (15) locks it. The Geneva movement turns the drums (2 and 29) through a worm shaft (22), gear clutch (19), the spline bushing (33) and shaft (25). When the ratchet wheel completes one turn, the lever (17) presses on a limit switch and disconnects the run-electromagnet. The command unit is shown in a photograph (Fig. 7) with removed cover. The basic electric command elements are placed in it. The main one is a highly sensitive magnetic modulation head, **ММР** (ММГ), designed at the Automation Institute of the Gosplan UkrSSR (Fig. 8 and photo Fig. 9). It records current pulses on the magnetic drum during machine setting and takes the readings during automatic operation. It is a combination of an ordinary magnetic head and a magnetic amplifier. The output voltage is proportional to

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D040/D112

Program controlled automatic...

the reproduced magnetic flux and independent from its variation rate. The output signal of the "MMG" is in the form of an amplitude-modulated carrier or the second voltage harmonic of the excitation generator formed in the "MMG". In the diagram (Fig. 8), (1) is a permalloy core and (2) a permalloy modulator in the form of a toroid. The record windings are on the permalloy core. The excitation windings on the modulator together with the capacitors (C_1 and C_2) and variable resistor (R) form a bridge circuit. Excitation generator voltage is supplied to the $a\delta$ diagonal and unbalance voltage removed from the $b\gamma$ diagonal through a diode (D). Excitation current produces a closed magnetic flux (ϕ) in the toroid. Magnetic flux (ϕ_e) removed by the head from the magnetic drum passes through the permalloy core and branches out in the toroid (2). Thus the excitation flux in one bridge arm coincides with the flux being removed from the magnetic drum, while in the other arm they are opposite. The inductance of the excitation windings changes, the bridge becomes unbalanced, and unbalance voltage reaches the amplifier unit input through a detector. The head is screened to protect it from the outer electrostatic fields. The control panels contain the manual controls for setting. The intermediate electric elements are placed in a separate cabinet connected with the lathe by cables

Card 5/12

S/121/61/000/005/002/005
D040/D112

Program controlled automatic...

with plugs. The power and protection elements on the lathe are those normally used for machine tools. The intermediate relays on it are **KDPW-1** (KDRSh-1) plug code relays. The circuits of the electromagnetic clutches are controlled by **KAPT** (KDRT) relays. The feed and amplifier units are in the top right part of the cabinet. The high-frequency component of detected signals is filtered in the amplifier unit, then amplified, shaped into square pulses and led into a thyatron trigger circuit that controls corresponding elements in the relay circuit. The feed unit supplies the necessary voltages to different points in the amplifying unit and consists of a kenotron rectifier with electronic voltage stabilization and a selenium rectifier with rectified current stabilization. Feed to both rectifiers is from one power transformer. The turret lathe is fitted with blocking and safety devices, and a signal system giving work, emergency and warning signals. There are 10 figures.

Card 6/12

RUMANIA/Chemical Technology - Chemical Products and Their
Application, Part 3. - Food Industry.

H-27

Abs Jour : Ref Zhur - Khimiya, No 7, 1958, 23026

Author : ~~A. Savu~~

Inst : -

Title : Drying by Method of Sublimation in Vacuo.

Orig Pub : Rev. ind. aliment. prod. vegetale, 1957, No 3, 1-4

Abstract : The mechanism of drying by sublimation is discussed.
An experimental installation for freezing (-30 to -40°)
of liquid food products and their drying by sublimation
in 7 to 12 hours under the pressure of 1 mm of Hg column
to the moisture content of 3 to 4% is described.

Card 1/1

SAVU, A.

TECHNOLOGY

Periodical: REVISTA INDUSTRIEI ALIMENTARE. PRODUSE ANIMALE. No. 3,
1958.

SAVU, A. Thermoelectric refrigerators. P. 19.
~~A revolving knife for cutting whey-cheese. p. 26.~~

Monthly List of East European Accession (EEAI), IC., Vol. 8, No. 3,
March 1959, Unclass.

Country : RUMANIA
Category : Cultivated Plants. Cereals. Leguminous Plants.
Tropical Cereals. M

Abs Jour : RZhBiol., No 6, 1959, No 24835

Author : Savu, A.
Inst : Studina Experimental Station.
Title : Testing the Varieties and Hybrids of Corn
and Their Regional Distribution.
Orig Pub : Probl. agric., 1958, 10, No. 4, 52-58

Abstract : Data of Studina's Experimental Station. Out of all the foreign and Rumanian varieties, the best variety for Olteniya and Moldova is the Rumanian Studina. Hybrids, obtained from crossing Rumanian Studina with Lister Fister and Rumanian Studina with "IKAR-54".

Card : 1/1

SAVU, A.; SAVU, S.; LESNIG, S.

New promising lines of winter barley grown at the Studina Station of the Rumanian Institute of Agronomic Research, p. 497.

COMUNICARILE. Bucuresti. Vol. 9, no. 5, May 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 9, no. 1, January 1960.

Uncl.

SAVU, A1.

Contributions to the study of the hydrographic network
evolution in Almas-Agrij Basin. Studia Univ B-B S. Geol-
Geog 7 no.1:75-87 '62.

SAVU, Al., conf., univ. (Cluj); NANA, Felicia, prof. (Cluj)

Iron deposits of Capusu Mic, Cluj. Natura Geografie 14 no.4:58-62
J1-Ag '62.

SAVU, Al., conf. univ. (Cluj)

Aspects of transcription of geographical denominations in
Transylvania. Natura Geografie 15 no.3:90-92 My-Je '63.

6.111, 411, 611, 1111, (1111)

Record the Bishop Leffle. Natural Geographic 15 no. 1:102-112
1924-1924.

REF ID: A66029606

SOURCE CODE: RU/0024/65/000/005/0024/0035

ACC NR: AP6029606

AUTHOR: Savu, Al. (University lecturer; Candidate of geographic sciences; Cluj);
Sucitu, I. (Professor; Bucharest)

L
E

ORG: none

TITLE: Maramures Regiune

SOURCE: Natura. Seria geografie-geologie, no. 5, 1965, 24-35

TOPIC TAGS: physical geography, economic geography, industrial development

ABSTRACT: A detailed physical-geographic characterization of the Maramures Regiune. The origin and evolution of the volcanic relief are discussed and some local particularities mentioned, and the economy, population distribution and transportation system of the area are presented. The authors point out that the region has changed from a formerly poorly developed area to a prosperous one, with the annual rate of growth last year being 15 percent higher than the nation-wide average. Principal industries are non-ferrous ores, chemicals, mining equipment, and wood; principal agricultural products, cereals, technical crops, orchards and the zootechnical sector. Orig. art. has: 1 figure. [Based on Eng. abst.] JPRS

SUB CODE: 08, 05 / SUBM DATE: none

Card 1/1

1917 2704

IONESCU, Florica (Bucuresti); PISCATI, C. (Craiova); MATEI,
Augustin I. (Cluj); MARCULESCU, Origen (Craiova);
STANESCU, Ilie (Sibiu); WESELY, Tiberiu (Tg. Mures);
OPREA, Miron (Ploiesti); BAGHINA, V. (Breaza); IONESCU,
Ilie (Pitesti); REINHEIMER, Emilia (Bucuresti); BORTAS,
Emilian (Bucuresti); SAVU, Constanta (Bucuresti);
Pranitchi, Teodor (Tg. Mures)

Examination questions Gaz mat B 15 no. 6:260-264 Je '64.

SAVU, H.

On some appearances of ultrabasic rocks in the central part of
Mures Geosyncline. Dari seama sed 45:59-73 '57/58 [publ. '62].

SAVU, H.; VASILESCU, A1.

Contributions to the knowledge of the porphyroid rocks and sulfide deposits associated with the crystalline shales in the Baia Borsa (Maramures) region. Dari seama sed 46:53-73 '58/59 [publ. '62].

SAVU, N.

Contributions to the knowledge of manganese deposits in the
Delinesti region (Semenicului Mountains). Dari seama sed 46
147-157 '58/59 [publ. '62].

SAVU, H.

Chemical composition of the Upper Jurassic, Lower Cretaceous
vulcanites in the Drocea Mountains. Dari seama sed 47:
199-220 '59/60 [publ. '62].

SAVU, H.; MEACSU, Gh.

Neocene volcanism in the Zarand Basin (Apuseni Mountains).
Dari seama sed 47:345-360 '59/60 [Publ. '62].

SAVU, H.; GHEORGHITA, I.; VASILESCU, Al.; BALOIU-FARCASAN, Maria

Geology and petrography of the northern part of the Semenicului
Mountains. Anuarul Comit geol 34 pt. 1:279-321 '64.

1. Submitted January 1964.

SAVU, H.; MICU, C.

Contributions to the knowledge of the geology and petrography of the central part of the Semenicului Mountains. Dari seama sed 49 pt.1:39-50 '61-'62 [publ. '64].

1. Submitted February 16, 1962.

MOGA, A., acad.; ZAGREANU, I., dr.; SUCIU, I., dr.; SIMPLACENAU, A.; SAVU, I.,
conf.

Considerations on the contribution of environmental physical factors
to the distribution of rheumatic heart disease. Med. intern. 14 no.4:
599-602 My '62.

1. Lucrare efectuata in Clinica I medicala si la Catedra de geografie
a Universitatii "Babes-Bolyai", Cluj.

(RHEUMATIC HEART DISEASE)
(HOUSING)

(WEATHER) (CLIMATE)
(CLOTHING)

SAAL, C., ing.; SAVU, Ioana, ing.

Cubing logs and round timber by integrator type automatic
machines. Ind. lemnului 15 no.5:166-173 My'64

SAVU, Isai, prof. inv. mediu (Oradea)

Problems of calculation by approximation in the secondary schools. Gaz mat fiz 15 no.1:39-49 Ja '63.

SAVU, S.; LESNIG, S.; SAVU, A.

New promising lines of winter barley grown at the Studina Station of the Rumanian Institute of Agronomic Research. p. 497.

COMUNICARILE. Bucuresti. Vol. 9, no. 5. May 1959.

Monthly List of East European Accessions (EEAI) IC, Vol. 9, no. 1, January 1960.

Uncl.

L 33719-66

SOURCE CODE: RU/0012/65/061/004/0559/0566

ACC NR: AP6025152

AUTHOR: Niculescu, Gh. (Doctor; Colonel; Candidate of medical sciences); Baciu, D. (Doctor; Lieutenant colonel); Filip, I. (Doctor; Major); Savu, Stefan (Doctor; Captain)

ORG: none

TITLE: Some physiopathological and therapeutic aspects of trophic ulcers of venous origin of the pelvis

SOURCE: Revista sanitara militara, v. 61, no. 4, 1965, 559-566

TOPIC TAGS: disease therapeutics, human physiology, pathology, circulatory system disease

ABSTRACT: After a brief review of the literature, the authors present the physiopathological picture associated with trophic venous ulcers of the pelvis and summarize the main accepted methods of treating them. They also comment on their own experience during the past 4 years, which included 95 operations for varicose veins of the pelvic members of which 9 cases were associated with chronic venous insufficiency and trophic ulcers. [JPRS: 33,500]

SUB CODE: 06 / SUBM DATE: 30Apr65 / ORIG REF: 020 / SOV REF: 005
OTH REF: 011

Card 1/1 *Do*

0916

0501

RUMANIA

NICULESCU, Gh., Colonel, Medical Corps, Doctor of Medical Sciences; BACIU, D., Lieutenant-Colonel, Medical Corps; FILIP, I., Major, Medical Corps; BUDAC, A., Captain, Medical Corps; and SAVU, St., Captain, Medical Corps.

"Considerations on the Treatment of Burns of the Hands"

Bucharest, Revista Sanitara Militara, Vol 16, Special No., 1965; pp 192-195

Abstract: Review of specific problems of hand burns: prevention of infection, continuous preservation of function, very precise and delicate grafting technic paying particular attention to prevention of contractures and to judicious suture; precautions needed are discussed in great detail. 6 photographs of pre- and post-operative aspects in one case.

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Surgery

RUMANIA

NICULESCU, Gh., Colonel, Medical Corps, Dr. in Medical Science; BACIU, D., Lieutenant-Colonel, Medical Corps; SAVU, St., Captain, Medical Corps; and BUDAG, A., Captain, Medical Corps.

"One-Stage Surgical Intervention in Inverted Talipes Equinus"

Bucharest, Revista Sanitara Militara, Vol 16, Special No., 1965; pp 230-234

Abstract: Case report and detailed description of the surgical procedure on a 49 year old man with extremely severe talipes equinus, following poliomyelitis and neuromuscular paralysis at age 4. Very good results 5 months following complex one-stage operation. 2 patient photographs, 3 roentgenograms, 2 surgical diagrams.

NICULESCU, Gh., Dr, Col, BACIU, D., Dr, Col, and SAVU, St., Dr, Cpt [affiliation not given]

"Current Therapeutic Conceptions Concerning Clavicular Fractures."

Bucharest, Revista Sanitara Militara, Vol 62, No 1, Jan-Feb 66, pp 47-56.

Abstract: The authors discuss the relative advantages of surgical and orthopedic treatment of clavicular fractures on the basis of literature reports and their own experience. On the basis of an analysis of the results, they favor orthopedic treatment for the majority of cases. Two case histories are presented .

Includes 14 figures and 9 references, of which 3 are Rumanian, one Russian, one German and 4 Western. -- Manuscript submitted 28 May 1965.

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- 223 -

RUMANIA

NICULESCU, Gh., Dr, Col, BACIU, D., Dr, Col, STRIMBEANU, I.,
Dr, Col, FILIP, I., Dr, Maj, and SAVU, St., Dr, Cpt. [affilia-
tion not given]

"Some Anatomical-Clinical and Therapeutic Aspects of Meniscus
Ruptures."

Bucharest, Revista Sanitara Militara, Vol 62, No 2, Mar-Apr 66,
pp 209-219.

Abstract: An analysis of 111 cases of meniscus rupture treated
during four years at the Central Military Hospital. Best
results were obtained with total meniscectomy, which is recom-
mended over partial meniscectomy; complete recovery was
obtained in all patients, with only a small percentage re-
maining on a limited-activity status. Average convalescence
time after surgery was 45 days.

Includes 3 figures and 6 references, of which 2 Rumanian,
2 German and 2 English-language. -- Manuscript submitted 12
August 1965.

1/1

CRISTU, M.; SCINTELE, N.; SAVU, V.; DORCIOMAN, D.; COJOCARU, V.

Automatic system for the zero adjustment o mechanical counters.
Automatica electronica 5 no.5:228-229 S-0 '61.

S/081/61/000/021/004/094
B102/B138

AUTHORS: Vizbarayte, Ya. I., Vosilyus, I. I., Savukinas, A. Yu.,
Yutsis, A. P.

TITLE: Two-electron matrix elements of the energy operator in the
case of jl -coupling

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1961, 12, abstract
21B84 (Tr. AN LitSSR, B, v. 1(24), 1961, 23 - 42)

TEXT: The matrix elements were determined for the matrices of jl -coupling
transformations to LS and jj -coupling, expressed by $6j$ -coefficients, and
also expressions for the electrostatic and spin-orbit interaction energy.
The coefficients at the radial integrals in the expressions of these
energies are tabulated for the configurations $s1$, pp , pd , pf , pg , dd , df and
 dg . [Abstracter's note: Complete translation.]

Card 1/1

S/081/61/000/021/003/094
B102/B138

AUTHORS: Vizbarayte, Ya. I., Vosilyus, I. I., Savukinas, A. Yu.,
Yutsis, A. P.

TITLE: Application of j1-coupling in the case of an excited oxygen
ion

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1961, 12, abstract
21B83 (Tr. AN LitSSR, B, v. 1(24), 1961, 43 - 48)

TEXT: The energy spectrum of a $1s^2 2s^2 2pnl$ configuration is examined using
j1-coupling. In the case $nl = 4f, 5g$, theoretical values for the positive
oxygen ion energy were found and compared with experimental data. [Abstrac-
ter's note: Complete translation.]

Card 1/1

S/236/63/000/001/001/015
D251/D308

AUTHORS: Bandzaytis, A. A. and Savukinas, A. Yu.

TITLE: A new method of studying $3nj$ coefficients

SOURCE: Akademiya nauk Litovskoy SSR. Trudy. Seriya B. no. 1,
1963, 3-10

TEXT: The authors propose a new method of studying $3nj$ coefficients which is less cumbersome than the existing methods. By using graphical representations, the sum of the products of $6j$ coefficients are studied. Schemes are worked out corresponding to $3nj$ coefficients of the first kind with odd or even numbers of $6j$ coefficients in the cycle, and for $3nj$ coefficients of the second kind. In contradistinction to the earlier methods, the number of different schemes of distribution of the $6j$ coefficients only slightly exceeds the number of different $3nj$ coefficients. The method is applied for $15j$, $18j$ and $21j$ coefficients. In all cases, except that of $15j$ coefficients of the 5th kind, the $3nj$ coefficients studied may be represented in the form of a polygon with $2n$

Card 1/2

A new method of ...

S/236/63/000/001/001/015
D251/D308

sides. Hence it is to be expected that, as n is increased, there will not appear any $3nj$ coefficients for which a Hamilton line does not exist. However, not all coefficients can be expressed as a sum of the products of two generalized Vigner coefficients each with an A_0 scheme. In the case of the $21j$ coefficients there are 79 such coefficients, which may be represented by a seven-point star, in a manner similar to that demonstrated by A. P. Tutsis, A. A. Bandzaytis and Ya. I. Vizbarayte (Trudy AN Litovskoy SSR, B., v. 2 (29), no. 3, 1962). Coefficient 52 may be expressed as a sum of the products of generalized Vigner coefficients, and the remaining coefficients may be presented in the form of certain tetradecagons. There are 12 figures.

ASSOCIATION: Institut fiziki i matematiki Akademii nauk Litovskoy SSR (Institute of Physics and Mathematics of the AS Lithuanian SSR)

SUBMITTED: July 13, 1962

Card 2/2

ACCESSION NR: AT4041506

S/2910/63/003/01-/0151/0154

AUTHOR: Shadzhyuvene, S. D., Savukinas, A. Yu.

TITLE: The problem of the classification of 21j-coefficients

SOURCE: AN LitSSR. Litovskiy fizicheskii sbornik, v. 3, no. 1-2, 1963, 151-154

TOPIC TAGS: 21j coefficient, 3nj coefficient, 3nj coefficient classification, 6j coefficient

ABSTRACT: In the general class of 3nj-coefficients the number of coefficients increases sharply with n. This makes the proper classification of the coefficients very important. The 82 diagrams for the 21j-coefficients were originally obtained from examination of the sums of products of 6j-coefficients by A. A. Bandzaytis et al. (Trudy* AN Litovskoy SSR, B, 1, 30, 1963). This article presents a table of 21j-coefficients which are classified in accordance with the method proposed for 3nj-coefficients by S. D. Budrite et al. (Lit. FS, 1, 271, 1961). The method is based on the non-vanishing properties of 3nj-coefficients. The symbols used to denote the coefficients are (p, q, h, x) , where p is the number of conditions for the formation of a rectangle, q is the number of conditions for the formation of a pentagon, etc. These symbols are correlated in the table with the number of the diagram as defined by A. A. Bandzaytis. The order in the table is such that the coefficient with a larger number of conditions for the formation of a rectangle is listed first and when the number of

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ACCESSION NR: AT4041506

conditions for formation of a rectangle is the same in two coefficients, then the coefficient which has a larger number of conditions for formation of a pentagon is listed first, etc.
Orig. art. has: 1 table.

ASSOCIATION: Institut fiziki i matematikaiki Akademii nauk Litovskoy SSR (Institute of Physics and Mathematics, Academy of Sciences, Lithuanian SSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: MA, NP

NO REF SOV: 007

OTHER: 000

Card

2/2

ACCESSION NR: AT4041507

S/2910/63/003/01-/0155/0158

AUTHOR: Zhvironayte, S. A., Vizbarayte, Ya. I., Karosene, A. V., Savukinas, A. Yu.

TITLE: The problem of the classification of the energy spectrum of atoms in the $2p \sup N$ nl configuration

SOURCE: AN LISSR. Litovskiy fizicheskiy sbornik, v. 3, no. 1-2, 1963, 155-158

TOPIC TAGS: energy spectrum,
electron shell

energy spectrum classification,

ABSTRACT: The structure of the energy spectrum of the $2p \sup N$ nl configuration for various degrees of shell filling and various levels of excitation of the outer electron is fully explored in the existing literature. In the present paper, the authors review some of the results of these theoretical investigations of the energy spectrum of N, O, F and Ne. When the excitation of the outer electron is increased, the LS-bond becomes invalid and the LS_0 -bond and J_0l -bond appear instead (sequential structure bonds). These bonds appear at lower excitation levels when the number of electrons in the closed shell is large. For atoms with the same ionization level, the sequential structure bonds appear at lower excitation levels of the outer electron in the atom with lower N (or Z). When two atoms have

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ACCESSION NR: AT4041507

the same Z, the sequential structure bonds appear at low levels of outer electron excitation when N is large (ionization level small). When two atoms have the same number of electrons in the partially filled shell, the sequential structure bonds appear at low levels of outer electron excitation when the nucleus charge is small. Orig. art. has: 1 table.

ASSOCIATION: Institut fiziki i matematiki Akademii nauk Litovskoy SSR (Institute of Physics and Mathematics, Academy of Sciences, Lithuanian SSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: NP

NO REF SOV: 008

OTHER: 003

2/2

Card

L 30072-65 EWI(1) IJP(c)
ACCESSION NR: AT5002009

S/2910/64/004/002/0197/0212

24
22
041

AUTHOR: Yutsis, A. P. (Jucys, A.); Vizbarayte, Ya. A.; Karaziya, R. I.; Savukinas, A. Yu. (Vizbaraite, J.); (Karaziya, R.); (Savukynas, A.); Bandzaitis, A.

TITLE: Calculation of matrix elements of the electrostatic interaction operator for complex atoms

SOURCE: AN LitSSR. Litovskiy fizicheskiy sbornik, v. 4, no. 2, 1964, 197-212

TOPIC TAGS: quantum mechanics, matrix, electron shell, electrostatic interaction, energy operator, quantum theory, wave function, Racah operator

ABSTRACT: In recent years, the tabulation of the submatrix elements of operators has been carried out to an extent which permits operations with the shells of s-, p- and d-electrons. This has stimulated the consideration of a method for calculation of the matrix elements of the operators. The present work is limited to the consideration of the expressions for the matrix elements of the electrostatic interaction operator for the case of complex configurations. For simplicity, the case of two either partially filled or almost completely filled shells is considered first. Then a method is developed for calculations in the case of any number of

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ACCESSION NR: AT5002009

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unfilled shells. The article first reviews the information on the unit tensor operators as described in the work of Racah (Phys. Rev. 62, 438 (1942); Phys. Rev. 63, 367 (1943)). The explicit formulae are given for two unfilled electron shells. In the case of three or four unfilled shells more general formulae are given, which permit easy calculation of the explicit formulae. In the case of almost filled shells, the relationships between the submatrix elements of the additional shells are utilized. The formulae for the matrix elements contain the $3n_j$ -coefficients for which the number of parameters does not exceed 6 ($n = 2$). Their use becomes very simple since the tables are available for $6j$ coefficients. Orig. art. has: 57 equations.

ASSOCIATION: Vil'nyusskiy Gosudarstvennyy universitet im. V. Kapsukasa (Vilnius state university); Institut fiziki i matematiki Akademii nauk Litovskoy SSR (Physics and mathematics institute, Academy of sciences, Lithuanian SSR)

SUBMITTED: 18Jul63

ENCL: 00

SUB CODE: GP, NP

NO REF SOV: 012

OTHER: 007

Card 2/2

L 30073-65 EWT(1) IJP(c)

ACCESSION NR: AT5002010

S/2910/64/004/002/0213/0231

23
21
B+

AUTHOR: Karosene, A. V. (Karosiene, A.); Savukinas, A. Yu.; Yutis, A. P. (Savukynas, A.; Juocys, A.)

TITLE: Matrix elements of the electrostatic interaction operator for a single electron outside the half-filled d-electron shell

SOURCE: AN LitSSR. Litovskiy fizicheskij sbornik, v. 4, no. 2, 1964, 213-231

TOPIC TAGS: quantum number, wave mechanics, matrix, electron function, LS coupling, quantum mechanics, electron shell, atomic spectrum, electrostatic interaction

ABSTRACT: Atoms and ions whose electron configuration consists of an unfilled d-electron shell and a single electron outside this shell comprise a rather large group of atomic systems which are of great importance in the field of modern spectroscopy. The theoretical study of the appropriate energy spectra has not been carried out to the limit in view of the modern developments of the general quantum theory. The present paper begins a small series of investigations designed to fill the indicated gap in the practical application of the atomic quantum theory. In this article, a study is made of the configuration with a half-filled d-shell. This shell is unique in that it can be viewed either as a partially filled or as an al-

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ACCESSION NR: AT5002010

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most filled shell. It was shown that viewing it as an almost filled shell results in simpler formulae for the matrix elements of the electrostatic interaction operator. In this case an important role is played by the calculation of the exchange part of these matrix elements. In this article only LS-coupling can serve as the starting point in all of the investigations of similar atomic systems. The obtained expressions for the diagonal as well as for the nondiagonal matrix elements permit the study of the energy spectra even in those cases when the LS-coupling loses its significance. This may be realized either by diagonalization of the energy matrix, taking into account the spin interactions, or by transition to another suitable type of bond by means of transformation matrices. Orig. art. has: 4 tables and 22 formulas.

ASSOCIATION: Institut fiziki i matematiki Akademii nauk Litovskoy SSR (Physics and mathematics institute, Academy of sciences, Lithuanian SSR); Vil'nyusskiy Gosudarstvennyy universitet im. V. Kapsukasa (Vilnius state university)

SUBMITTED: 24Aug63

ENCL: 00

SUB CODE: GP, NP

NO REF SOV: 004

OTHER: 005

Card 2/2

L 30074-65 EWT(1) IJP(c)

ACCESSION NR: AT5002011

S/2910/64/004/002/0233/0247

23
21
B+

AUTHOR: Sayukinas, A. Yu. (Savukynas, A.); Karosene, A. V.; Yutsis, A. P.;
(Karosiene, A.; Jucys, A.)

TITLE: Matrix elements of the electrostatic interaction operator for one electron outside the partially filled or almost filled d-shell

SOURCE: AN LitSSR. Litovskiy fizicheskiy sbornik, v. 4, no. 2, 1964, 233-247

TOPIC TAGS: quantum number, wave mechanics, matrix, electron function, quantum mechanics, electron shell, atomic spectrum, electrostatic interaction operator

ABSTRACT: The matrix elements of the energy operator of the electrostatic interaction for one electron outside the semifilled d-shell wave have been presented in Liet. fiz. rinkiny, 4, 213 (1964). In the present work, the results of the previous work are utilized. This refers to both the calculation methods for matrix elements as well as the form of these expressions. The paper presents the derivation of matrix elements of the electrostatic interaction operator for the d^{N1} configuration, where $N = 1, 9; 2, 8; 3, 7; 4, 6$. The coefficients of the radial integrals are expressed in terms of quantum numbers l and L , with the assigned values of S

Card 1/2

L 30074-65

ACCESSION NR: AT5002011

2

(where L and S are total orbital momentum and spin moment, respectively). A 10-page table is compiled for the d^Nl configuration with any value of N. Orig. art. has: 6 formulas and 1 table.

ASSOCIATION: Institut fiziki i matematiki Akademii nauk Litovskoy SSR (Physics and mathematics institute, Academy of sciences, Lithuanian SSR); Vil'nyusskiy Gosudarstvennyy universitet im. V. Kapsukasa (Vilnius state university)

SUBMITTED: 24Aug63

ENCL: 00

SUB CODE: GP; NF

NO REF SOV: 005

OTHER: 003

Card 2/2

L 30085-65 EWT(1) IJP(c)

ACCESSION NR: AT5002014

S/2910/64/004/003/0299/0310

22
20
B+1

AUTHOR: Savukinas, A. Yu.; (Savukynas, A); Yutsis, A. P.; Nashlenas, E. P.; (Nashlenas E.); (Gucys, A.)

TITLE: The use of negative parameters in calculations of the matrix elements of the energy operator for the case of one electron outside the unfilled shell

SOURCE: AN LitSSR. Litovskiy fizicheskiy sbornik, v. 4, no. 3, 1964, 299-310

TOPIC TAGS: wave mechanics, matrix, electron function, electron shell, quantum mechanics, negative parameter, energy operator

ABSTRACT: In a previous article (DAN SSSR 154, 812, 1964), the concept of symmetry of the quantities in the theory of momentum with respect to the substitution of the negative quantum number of the momentum was introduced. This substitution has the form

$$J \rightarrow -J - 1$$

and it affects only the phase coefficients of the appropriate quantities. In the present paper, the problem was considered in order to simplify the calculation of the matrix elements of the energy operators for the case of one electron with an unfixed orbital quantum number l outside the unfilled electron shell having a fixed orbital quantum number. Use was made of the symmetry quantities which enter into

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L 30085-65

ACCESSION NR: AT5002014

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the expression for matrix elements with respect to the substitution $l \rightarrow -l - 1$. Phase relationships were found for the radial integral coefficients in expressions for the matrix elements in the cases of LS , LS_0 , J_0l and J_0j coupling. The applicability of these relationships is demonstrated by means of actual examples. Orig. art. has: 2 tables and 52 formulas.

ASSOCIATION: Institut fiziki i matematiki Akademii nauk Litovskoy SSR (Physics and mathematics institute, Academy of sciences, Lithuanian SSR); Vil'nyusskiy Gosudarstvennyy universitet im. V. Kapsukasa (Vilnius state university)

SUBMITTED: 06Jan64

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NO REF SOV: 012

OTHER: 001

Card 2/2

L 30084-65 EWT(1) IJP(c)

ACCESSION NR: AT5002015

S/2910/64/004/003/0311/0330

22
20
B+

AUTHOR: Vizbarayte, Ya. I. (Vizbaraitė, J.); Savukinas, A. Yu.; Yutsis, A. P.;
(Savukynas, A.; Jucys, A.)

TITLE: Calculation of the energy spectrum of atoms in d^1 and $d^9 1$ configurations

SOURCE: AN LitSSR. Litovskiy fizicheskiy sbornik, v. 4, no. 3, 1964, 311-330

TOPIC TAGS: electron energy level, quantum mechanics, copper ion, energy spectrum, matrix, electron shell

ABSTRACT: The next in complexity to the $p^5 1$ configuration which was considered in Liet. fiz. rinkinya 2, 2/3 (1962) is the $d^9 1$ configuration. This configuration is considered in this article. Expressions are obtained for the coefficients of the radial integrals in the formulae for the matrix elements of the energy operator for the d^1 and $d^9 1$ electron configurations in terms of the quantum number l . In this work, l is not used as an independent quantum number. The article considers LS , LS_0 and $J_0 1$ couplings, including the spin orbital interaction. For completeness of the results a small number of matrix elements is obtained by substituting the

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L 30084-65

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ACCESSION NR: AT5002015

$l + a_l$ type expression for L. A specific example is given by calculating the energy spectrum for the positive Cu ion in the $1s^2 2s^2 2p^6 3d^9 n_l$ ($n_l = 4f, 5g$) configuration. Experimental data are available for this case. The absence of sufficient experimental data does not permit analysis of the energy spectrum of the d^1 configuration, nor determination of the degree of excitation at which the J l type of coupling is operative. Orig. art. has: 14 formulas, 4 tables, and 1 figure.

ASSOCIATION: Vil'nyusskiy Gosudarstvennyy universitet im. V. Kapsukasa (Vilnius state university); Institut fiziki i matematiki Akademii nauk Litovskoy SSR (Physics and mathematics institute, Academy of sciences, Lithuanian SSR)

SUBMITTED: 08Jan64

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SUB CODE: NP, GP

NO REF SOV: 006

OTHER: 004

Card 2/2

L 22267-66 EWT(d)/EWT(1)/I LJP(e)

ACC NR: AR6005181

SOURCE CODE: UR/0058/65/000/009/B004/B004

SOURCE: Ref. zh. Fizika, Abs. 9B45

AUTHORS: Savukinas, A. Yu.; Karosene, A. V.; Bandzaytis, A. A.; Yutsis, A. P.TITLE: Symmetry of mirror reflection in the theory of angular momentum >/

REF SOURCE: Lit. fiz. sb., v. 4, no. 4, 1964, 467-478

TOPIC TAGS: quantum theory, quantum number, mathematic operator, eigenvalue

TRANSLATION: The authors discuss the behavior of the quantities which are involved in the theory of the angular momentum under the transformation of the type $j \rightarrow -j - 1$ (1). It is shown that this transformation is equivalent to a transition to a new system of coordinates, obtained by mirror reflection in the plane of the indeterminate components of the angular momentum. If $\psi(jm)$ is the eigenfunction of the operators of the square of the angular momentum and of the projection of the momentum on the z axis, then the transformation corresponding to the substitution (1) is $x' = x, y' = y, z' = -z$. Phase relations are presented connecting pairs of $9j$ symbols, such that the substitution (1) is realized for all the momenta in one of the $9j$ symbols of the pair. These relations, with allowance for the symmetry properties of the $9j$ symbols, encompass all possible cases. Rules for graphically obtaining the corresponding phase relations, suitable for any $3nj$ symbol, are presented.

SUB CODE: 20

Card 1/1 est

ACCESSION NR: AP4042414

S/0056/64/047/001/0385/0387

AUTHORS: Bandzaytis, A. A.; Savukina, A. Yu.; Yutsis, A. P.

TITLE: Reflection symmetry in quantum mechanics

SOURCE: Zh. eksper. i teor. fiz., v. 47, no. 1, 1964, 385-387

TOPIC TAGS: group theory, quantum theory, shell theory, electron shell

ABSTRACT: It is shown that the substitution of the type $j \rightarrow \bar{j} = -j - 1$, discussed by the authors elsewhere (DAN SSSR v. 154, 812, 1964) can be regarded as a reflection of the coordinate system. A procedure is given for finding the symmetry properties of the $3nj$ coefficients under such a reflection. A method is also presented for applying this symmetry to matrix elements of operators of physical quantities. The matrix element of the electrostatic interaction between an l -electron and the l_0^N shell, in the $l_0^N l$ configura-

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ACCESSION NR: AP4042414

tion for $J_0 l$ coupling, is considered as an example, and it is shown that half of the expressions for the coefficients in terms of l can be obtained from the other half by the substitution $l \rightarrow \bar{l} \rightarrow -l - 1$. This indicates that the reflection symmetry properties make it possible to shorten the computation of expressions of this type and to reduce the sizes of tables of matrix elements for arbitrary operators of any quantum system. Orig. art. has: 4 formulas and 1 figure.

ASSOCIATION: Institut fiziki i matematiki Akademii nauk Litovskoy SSSR (Institute of Physics and Mathematics, Academy of Sciences Lithuanian SSR); Vil'nyuskiy gosudarstvennyy universitet im. V. Kapsukasa (Vilnius State University)

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OTHER: 002

ACCESSION NR: AP4012963

S/0020/64/154/004/0812/0814

AUTHORS: Bandzaytis, A.A.; Karosene, A.V.; Savukinas, A.Yu.;
Yutsis, A.P. (Academician)

TITLE: Magnitudes of angular momentum with negative parameters representing the angular momentum quantum numbers.

SOURCE: AN SSSR. Doklady*, v.154, no.4, 1964, 812-814

TOPIC TAGS: angular momentum, negative parameter, quantum number, quantum mechanics, mathematical physics, Klebsch-Gordan coefficient, tensorial set

ABSTRACT: The eigenvalue equation

$$j^2 \psi(jm) = j(j+1) \psi(jm), \tag{1}$$

where j^2 is the operator for the square of the angular momentum will not change if the quantum number j can be changed as follows:

$$j \rightarrow \bar{j} = -j - 1. \tag{2}$$

The Klebsch-Gordan coefficients which play an especially vital role in

Cord 1/4

ACCESSION NR: AP4012963

mathematical devices for the vector addition of angular momentum are expressed by the ordinary sums of values consisting of the factorials of the linear combinations of the parameters of these coefficients. Since the permutation of (2) has the consequence that some of these linear parameter combinations become negative. The formulas for the Klebsch-Gordan coefficients have the interesting result that during the substitution of (2), the number of factorials from the negative values is identical in both the numerator and denominator. Hence, the following ratio can be effectively employed:

$$\frac{(-a)!}{(-b)!} = \frac{(-1)^{b-1}(b-1)!}{(-1)^{a-1}(a-1)!} = (-1)^{b-a} \frac{(b-1)!}{(a-1)!}.$$

This ratio is obtained by estimating the ratio limit between two Gaussian II functions when they approach their poles. The indexes $a - 1$ and $b - 1$ denote the number of negative factors. When substituting (2) for discrete parameters representing the angular momentum quantum numbers, the equations for the Klebsch-Gordan coefficients pass into each other or into themselves to within the phase factor. In addition to this, other forms of equations are obtained which have not been utilized up to the present. In such a case, an indeterminate

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ACCESSION NR: AP4012963

factor i appears, which makes these formulas awkward for the problem in question. From a practical point of view, the important case is when substitution of (2) is not carried out by all three parameters. The most important parameters are the Klebsch-Gordan coefficients with two negative parameters representing the angular momentum quantum number. The ratio

$$\begin{bmatrix} \bar{j}_1 & l_2 & \bar{j} \\ m_1 & m_2 & m \end{bmatrix} = (-1)^{l_2+m_2} \begin{bmatrix} j_1 & l_2 & j \\ m_1 & m_2 & m \end{bmatrix}$$

can be used for calculating the Klebsch-Gordan coefficients for a given value of j_2 . Then

$$\begin{bmatrix} j_1 & l_2 & j_1+k \\ m_1 & m_2 & m_1+m_2 \end{bmatrix} = (-1)^{l_2+m_2} \begin{bmatrix} j_1 & l_2 & \bar{j}_1-k \\ m_1 & m_2 & m_1+m_2 \end{bmatrix}$$

where $j_2 = k = -j_2$. Equation (5) shows that the event $j = j_1 + k$ can be obtained from the event $j = j_1 - k$ by the permutation $j_1 \rightarrow \bar{j}_1$, which enables the formula tables for the Klebsch-Gordan coefficients to be reduced by almost one-half. Orig. art. has: 18 formulas.

Card 1 3/4

ACCESSION NR: AP4012963

ASSOCIATION: Institut fiziki i matematiki, Akademii nauk LitSSR (Institute of Physics and Mathematics, Academy of Sciences, LitSSR); Vil'nyusskiy gosudarstvennyy universitet im. V. Kapsukasa (Vilno State University)

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Card 4/4

L 28000-66 EWT(1) IJP(c) GG
ACC NR: AT6012879

SOURCE CODE: UR/2910/65/005/002/0171/0184

45
B+

AUTHOR: Yutsis, A. P. -- Jucys, A.; Savukinas, A. Yu. -- Savukynas, A.;
Bandzaitis, A. A. -- Bandzaitis, A.

ORG: Vilnius State University im. V. Kapsukas (Vil'nyusskiy gosudarstvennyy universitet); Institute of Physics and Mathematics, AN Lithuanian SSR (Institut fiziki i matematiki AN Litovskoy SSR)

TITLE: Comments on the mirror reflection symmetry in the quantum mechanical angular momentum theory

SOURCE: AN LitSSR. Litovskiy fizicheskiy sbornik, v. 5, no. 2, 1965, 171-184

TOPIC TAGS: quantum number, light reflection, function, coordinate system, quantum mechanics

matrix

ABSTRACT: The mirror reflection symmetry in the quantum mechanical angular momentum theory has been investigated. The reflection of the coordinate system and of the space in the plane of undefined components of the angular momentum was examined. It was determined that when in the normal (right-hand) coordinate system, the angular momentum quantum number j is used, the quantum number $j = -j-1$ must be used in the reflected (left-hand) coordinate system. The simultaneous reflection of the coordinate system and space is equivalent to the time reversal, in the case of proper functions of the angular momentum operator, and to the transformation of the standard

Card 1/2

IVANOV, G.P., kandidat tekhnicheskikh nauk; SAVUKOV, V.P., inshener.

Effect of electric spark hardening on wear resistance and fatigue strength. Metalloved.i obr.met. no.6:52-56 D '55. (MLRA 9:3)

1. Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya.
(Steel--Electrometallurgy) (Electric spark)

NOVIKOV, Vladimir Nikolayevich; IVANOV, Georgiy Petrovich; ~~SAYIKOV~~
~~Vladimir Pavlovich~~; BERESTOVOY, Ye.I., inzhener, redaktor;
BOBROVA, Ye.N., tekhnicheskiy redaktor

[Electric spark hardening of locomotive parts; practices of the
Moscow depot of the Moscow-Kursk-Donbass railroad] Elektroiskrovoe
uprochnenie detalei parovozov; opyt depo Moskva Moskovsko-Kursko-
Donbasskoj dorogi. Moskva, Gos.transp.zhel-dor.izd-vo, 1957.
50 p. (MLBA 10:7)

(Locomotives--Repairs) (Electric spark)

PHASE I BOOK EXPLOITATION

29

Ivanov, Georgiy Petrovich, Candidate of Technical Sciences

Tekhnologiya elektroiskrovogo uprochneniya instrumentov i detaley mashin
(Technology of Electric Spark Hardening of Tools and Machine
Parts) Moscow, Mashgiz, 1957. 187 p. 7,000 copies printed.

Reviewer: Popilov, L. Ya., Engineer; Ed.: Astaf'yev, S. S.,
Candidate of Technical Sciences; Technical Ed.: Uvarova, A. F.,
Managing Ed. for literature on transport, highway and power
machine building (Mashgiz): Voskresenskiy, N. N., Engineer.

PURPOSE: This monograph is intended for engineers, technicians,
foremen, and electrotechnologists employed in machinery
plants.

COVERAGE: The book 1) explains the basic problems of electro-spark
hardening (nature of process, technology, and the harden-
ing technique), 2) describes new electro-spark equipment
developed by TsNIITMASH (Central Scientific Research
Institute for Heavy Machine Building), 3) presents the

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Technology of Electric Spark (Cont.)

29

theoretical, physical and metallographic principles of electro-spark hardening, and 4) on the basis of numerous experiments determines the special physical properties and describes mechanical tests of hardened specimens. Furthermore, the book introduces electro-spark hardening technology developed on the basis of physical parameters of the process, describes the practical application of the technology to hardening of tools and machine parts, and explains full-scale testing of various hardened machine parts. Pages 15-18 present basic data on the application of the electro-spark hardening method at the Kirovskiy Zavod (Kirov Plant) in Leningrad, at GAZ (Gor'kiy Automobile Plant imeni Molotov), Uralsmashzavod (Ural Heavy Machinery Plant) and Uralvagonzavod (Ural Railroad-car Plant). The new electro-spark hardening machines EAI-1 single-electrode, IYe-2, IYe-2M, IAS-2M (five-electrode) developed by TsNIITMASH during 1954-1957 are compared with the KEI-1 and the UPR-3M. Persons assisting the author in the TsNIITMASH laboratory experiments were: Senior Engineer V.P.Savukov, Foreman A.D.Bondarev, Candidate of Technical Sciences S.S.Astar'ev, Engineer V.V.Borisova, and Foreman A.S.Yeremin. The bibliography lists 48 references, all of them Soviet.

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Technology of Electric Spark (Cont.)

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