L 11810-66 EWT(1)/FCO GW

ACC NR: AT6003524 SOURCE CODE: UR/3184/65/000/007/0039/0049

AUTHOR: Dorman, L.I. (44,55) (Doctor of physico-mathematical sciences); Chkhetiya, A.M. (44,55)

37
B+1

ORG: none

TITLE: Electromagnetic conditions in interplanetary space

SOURCE: AN SSSR. Mezhduvedomstvennyy geofizicheskiy komitet (44,55). Kosmicheskiye luchi, no. 7, 1965, 39-49

TOPIC TAGS: magnetic storm, active solar region, central meridian, solar rotation, sunspot, chromospheric flare, facula, flocculus, geomagnetic pole, cosmic ray, neutron component

ABSTRACT: A magnetic storm (12,44,55) started with sudden commencement on 14 March 1958, the maximum activity of which lasted 4 hr. Active solar region no. 12 passed the central meridian on 6-14 March. This region was observed in ten solar rotations. On the last passage, the active region contained groups of sunspots, chromospheric flares, faculae, and flocculi, which successively passed the central meridian. A long-lasting sedimentation of protons in the polar cap started on 14 March. Anomalous absorption took place around the geomagnetic pole to the 60th parallel. The influence of the magnetic storm on cosmic rays was studied from observation data of 44 stations. These data were compared with the rate of the intensity of the magnetic storm during its display. Two Forbush effect models were used for analyzing

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ACC NR: AT6003524

the corpuscular stream. The width of the stream was found to be equal to $1.5 \cdot 10^{13}$cm. The intensity of the magnetic field in front of the stream was found to be equal to $2.0 \cdot 10^{-5}$ gs and behind it to $1.5 \cdot 10^{-5}$ gs. The density of the corpuscular stream was determined to be equal to $3.2 \cdot 10^{-23}$ g/cm^3, and the coefficient R of the cosmic ray diffusion into the corpuscular stream was found to be equal to $1.7 \cdot 10^{20}$cm^2/sec. Harmonic analysis of the neutron component showed that the first harmonics for the Northern and Southern Hemispheres were equal, and the maximum of the first harmonic was shifted to the evening. This circumstance indicates that the magnetic fields of the stream are opposite to those of the earth. An analysis of the state of the neutron component of cosmic rays shows changes which are different in Europe from those in America. Orig art. has: 6 figures and 32 formulas. [EG]

SUB CODE: 03/ SUBM DATE: none/ ORIG REF: 014/ OTH REF: 005/ ATD PRESS: 4178

Card 2/2

L 11808-66 EWT(1)/EWT(m)/FCC/T/EWA(h) LJP(c) GW

ACC NR: AT6003528 SOURCE CODE: UR/3184/65/000/007/0140/0144

55 55 41

AUTHOR: Dorman, L.I. (Doctor of physico-mathematical sciences); Chkhetiya, A.M. BH

ORG: none

TITLE: On the display of the surrounding of the terrestrial magnetosphere by cosmic rays 44,55

55

SOURCE: AN SSSR. Mezhduvedomstvennyy geofizicheskiy komitet. Kosmicheskiye luchi, no. 7, 1965, 140-144

TOPIC TAGS: cosmic ray, cosmic ray intensity, magnetic storm, terrestrial magnetic field, geomagnetic latitude, solar plasma, horizontal component

ABSTRACT: In some sharp decreases of cosmic-ray intensity, increase peaks occur. These intensity peaks differ from the increase of cosmic-ray intensity during the main phase of a magnetic storm. Variations of cosmic rays are analyzed in detail, but a final solution is not attained. On 15 July 1959, a special peak was observed which could not have been caused by solar cosmic rays because at that time large chromospheric flares did not appear and the spectrum of solar cosmic rays could not create an increase in intensity. This peak was observed at many stations during a sharp decrease in cosmic-ray intensity and the horizontal component of the terrestrial magnetic field. The intensity of the peak depends upon the geomagnetic latitude; it increases from high latitudes to the 55th parallel and then gradually decreases.

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ACC NR: AT6003528 O

A graph in the original article shows the correlation of the increase of the horizontal component of the geomagnetic field to the peak. The peak of the increased intensity of cosmic rays appeared during the sharp increase of the horizontal component, indicating that the earth's magnetosphere was surrounded by solar plasma. This caused an increase in the geomagnetic field and a redistribution of the arriving cosmic rays. Orig. art. has: 6 figures. [EG]

SUB CODE: 03/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 001/ ATD PRESS 4178

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L 11809-66 EWT(l)/EWT(m)/FCC/T/EWA(h) IJP(c) GW

ACC NR: AT6003529 SOURCE CODE: UR/3184/65/000/007/0161/0164

55 53

AUTHOR: Dorman, L. I. (Doctor of physico-mathematical sciences); Shatashvili, L. Ch.

53

ORG: none 64

19,65

TITLE: Cosmic-ray 27-day variations and general characteristics of electromagnetic conditions in interplanetary space

55

SOURCE: AN SSSR. Mezhduvedomstvennyy geofizicheskiy komitet. Kosmicheskiye luchi, no. 7, 1965, 161-164

TOPIC TAGS: cosmic ray, neutron ~~component~~, solar rotation, neutron spectrum, solar activity, ~~Forbush effect~~, geomagnetic ~~activity; lunar diurnal variation~~ field, solar plasma, magnetic storm

ABSTRACT: The neutron and the hard components of cosmic rays observed at mountain and sea-level stations have been processed in order to determine the influence of solar rotation on the intensity of cosmic rays. Observation data used were world-wide in scope. The 27-day variations of cosmic rays, which were found earlier, made it possible to compute the spectrum of the neutron component from data of mountain and sea-level stations. The study of spectral variations during a 27-day period of maximum solar activity showed that the spectrum was nearly the same as that of the Forbush effect during magnetic storms. Cosmic-ray variations with a 27-day period appear in the form of discrete waves. A map was composed representing

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L 11809-66

ACC NR: AT6003529 O

correlations between the earth's geomagnetic activity, Wolf numbers, and the neutron component. A distinct correlation between these parameters was difficult to find. It can be assumed that the 27-day period of cosmic-ray variations relates to short-lived variations. The 27-day period is similar to the lunar diurnal variations, which depend upon the lunar phases with a maximum during the full-moon phase. Further analysis made it possible to conclude that the active element in 27-day cosmic-ray variations is the magnetized solar plasma which is ejected into space. [EG]

SUB CODE: 03/ SUBM DATE: none/ ORIG REF: 011/ OTH REF: 006/ ATD PRESS: 4179

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Card 2/2

L 10924-66 EWT(1)/FCC/EWA(h) GW

ACC NR: AP6002745 SOURCE CODE: UR/0203/65/005/006/1003/1008

AUTHOR: Dorman, L. I.; Kolomeyets, Ye. V.; Sergeyeva, G. A.

ORG: Kazakh State University im. S. M. Kirov (Kazakhskiy gosudarstvennyy universitet)

TITLE: Solar diurnal and semidiurnal variations of cosmic rays and their dependence upon solar activity

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 6, 1965, 1003-1008

TOPIC TAGS: cosmic ray, neutron, ~~component, component phase~~, diurnal variation, ~~semidiurnal variation~~, solar activity, energy spectrum, exponential function

ABSTRACT: Variations of the amplitude and phase of the solar diurnal changes of the neutron component of cosmic rays were investigated on the basis of data from the global network of stations obtained in the years 1957—1958. Changes in the phase of solar diurnal and semidiurnal variations are studied separately. The phase of diurnal variations changes slightly from month to month. The maximum of diurnal variations taken from equatorial stations precedes that of high latitude stations by 2.5—3 hr. A tendency for the phase to shift to a later time at high and low latitudes is found with a decrease in solar activity. In 1962 the phase shift was noted at earlier hours. The phase of semidiurnal variations changes markedly and does not depend upon solar activity or particle energy. A table in the original article shows

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L 10924-66

ACC NR: AP6002745

the mean yearly amplitudes computed for all latitudes by the first harmonics. The amplitude in high latitudes increased during the period 1960—1962, and the amplitude in middle and low latitudes decreased. The energy spectrum for each month has been computed using the mean monthly amplitudes of the first harmonics and mean coupling coefficients. The spectrum within the energy interval 3—15 Bev was computed by the formula $\delta D(\varepsilon) / D(\varepsilon) = a\varepsilon^{-\gamma}$, and γ values are given in a table in the original article. The mean amplitude of the second harmonics shows a wide range of values, which is caused by charges of electromagnetic conditions in space and around the earth. The energy spectrum of diurnal variations of cosmic rays within the energy interval 3 to 15 Bev for the neutron component may be represented by an exponential function with the exponent equal to approx. -0.5. The phase of diurnal variations changes in one hour on the earth and at equatorial stations occurs earlier than at other latitudes. Orig. art. has: 4 tables and 4 figures. [EG]

SUB CODE: 03,04/ SUBM DATE: 05Jun64/ ORIG REF: 005/ OTH REF: 007/ ATD PRESS: 4170

Card 2/2

DORMAN, L.I.; MAZARYUK, Ye.A.

Complex amplitude-phase modulation of periodic variations in cosmic rays. Geomag. i aer. 5 no.6:1099-1102 N-D '65.
(MIRA 19:1)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR. Submitted May 4, 1965.

L 16028-66 EWT(1)/EWA(h)/FCC GW

ACC NR: AT6003522 SOURCE CODE: UR/3184/65/000/007/0005/0017

AUTHOR: Dorman, I. V.; Dorman, L. I. (Dr. of Physico-Mathematical Sciences) 30 B+1

ORG: none

TITLE: Investigation of the 11-year cosmic ray cycle (from data of observations at sea level)

SOURCE: AN SSSR. Mezhduvedomstvennyy geofizicheskiy komitet. Kosmicheskiye luchi, no. 7, 1965, 5-17

TOPIC TAGS: cosmic ray, geomagnetism, sun spot cycle, magnetic rigidity

ABSTRACT: Data from a world-wide network of neutron monitors, measurements of latitude effects in the neutron and hard components of cosmic rays at sea level, and stratospheric measurements of proton and α-particle fluxes in the low energy region made from high altitude balloons are used as a basis for analyzing the 11-year cosmic ray cycle. It is found that the amplitude of the 11-year variation increases with a reduction in the geomagnetic cutoff hardness R which indicates that the primary spectrum of the 11-year variation decreases with an increase in R. The lag in

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L 16028-65

ACC NR: AT6003522

changes of cosmic ray intensity with respect to changes in solar activity increases with a reduction in the penetrating power of the particles. There is a close relationship between cosmic ray intensity, the number of sunspots and radiation flux at 10.7 cm. When considering variations for shorter periods of time, there is a closer relationship between the intensity of cosmic rays and the K_p-index of magnetic activity, while longer time intervals show a closer correlation between intensity and the number of sunspots. Hysteresis phenomena are studied on the basis of neutron monitor data and observations in the stratosphere. For $R>3$ Bev the energy spectrum for the 11-year cycle is given in the form $\delta D(R)/D(R)\sim R^{-(0.8-0.9)}$ which is steeper for $R>13$ Bev with $\gamma>2$. The spectrum of the 11-year cycle was considered together with delay phenomena to determine the scattering path as a function of particle hardness and the dimensions of the modulating space. The magnetic field intensity in scattering nonhomogeneities is determined for various assumptions on the relationship between the average dimensions of nonhomogeneities and the distance between them. The contribution of variability in the lag effect is evaluated. Orig. art. has: 8 figures, 16 formulas.

SUB CODE: 08/ SUBM DATE: 00/ ORIG REF: 013/ OTH REF: 019

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L 15935-66 EWT(1)/FCC/EWA(h) GW

ACC NR: AT6003525 SOURCE CODE: UR/3184/65/000/007/0121/0130

34
B+F

AUTHOR: Dorman, L. I. (Dr. of Physico-Mathematical Sciences); Tyasto, M. I.

ORG: none

TITLE: Effect of a filamentary equatorial current ring on the geomagnetic cutoff hardness of directional cosmic radiation

SOURCE: AN SSSR. Mezhduvedomstvennyy geofizicheskiy komitet. Kosmicheskiye luchi, no. 7, 1965, 121-130

TOPIC TAGS: magnetic rigidity, cosmic radiation, geomagnetism

ABSTRACT: The threshold hardnesses are numerically calculated for particles arriving at various angles to the zenith. The results are given in the form of curves for cutoff hardness as a function of zenith angle for eastern and western directions of particle arrival. Curves are also given showing the relationship between threshold hardness and geomagnetic latitude for various zenith angles in the east-west plane. These curves show that a reduction in the radius of the current ring or an increase in the ring current reduces the threshold hardnesses for both eastern and western

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L 15935-66

ACC NR: AT6003525 O

directions. This indicates that there should be a reduction in east-west asymmetry at lower latitudes during the main phase of a magnetic storm due to the change in cutoff hardness. Orig. art. has: 5 figures, 6 formulas.

SUB CODE: 08/ SUBM DATE: 00/ ORIG REF: 006/ OTH REF: 006

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Card 2/2

L 16018-66 EWT(1)/FCC GW

ACC NR: AT6003526 SOURCE CODE: UR/3184/65/000/007/0131/0134

AUTHOR: Dorman, L. I. (Dr. of Physico-Mathematical Sciences); Tyasto, M. I. 29

ORG: none B+1

TITLE: Effect of a spherically distributed westerly current on geomagnetic cutoff hardness

SOURCE: AN SSSR. Mezhduvedomstvennyy geofizicheskiy komitet. Kosmicheskiye luchi, no. 7, 1965, 131-134

TOPIC TAGS: geomagnetism, magnetic storm, magnetic rigidity

ABSTRACT: The authors consider the variation in cutoff hardness during the main phase of a magnetic storm assuming that an equatorial current is generated which flows along the surface of a sphere. The following expression is given for the integral of motion

$$R\cos\lambda\sin\theta + \frac{A}{p}R\cos\lambda = 2\gamma, \qquad (1)$$

where R is the magnetic hardness; A is the vector potential of the magnetic field;

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ACC NR: AT6003526

θ is the angle between the vector for the velocity of the particle and the plane of the meridian; 2γ is the constant of integration. Curves are given for γ as a function of the square of the current shell radius in Störmer units. The resultant data are used for finding the threshold hardnesses for vertically incident particles as a function of the geomagnetic latitude for positions of the magnetic field on the equator equivalent to 100, 200, 300 and 400 γ, and for current shells with radii equivalent to 3, 5 and 6 earth radii. These curves show that the cutoff hardness for particles in the middle latitudes is affected not only by the drop in the horizontal component (the force of the magnetic storm) but also by the radius of the current shell responsible for this drop. Orig. art. has: 3 figures, 1 table, 8 formulas.

SUB CODE: 08/ SUBM DATE: 00/ ORIG REF: 002/ OTH REF: 002

Card 2/2

L 16023-66 EWT(1)/FCC/EWA(h) GW

ACC NR: AP6006654 SOURCE CODE: UR/0203/65/006/001/0019/0026

28
B

AUTHOR: Dorman, L. I.; Medvedev, M. Yu.; Smirnov, V. S.

ORG: Polar Geophysical Institute, Kola Division, AN SSSR (Polyarnyy geofizicheskiy institut Kol'skogo filiala AN SSSR)

TITLE: Highly accurate trajectories of cosmic rays in a geomagnetic field

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 1, 1966, 19-26

TOPIC TAGS: cosmic ray intensity, magnetic dipole, geomagnetic field, anisotropic motion, asymptotic direction, spherical harmonic function

12

ABSTRACT: A study of planetary distribution of the intensity of cosmic rays revealed that the theoretical computations based on the magnetic dipole do not agree with the measured intensity of cosmic rays. This result indicated that the higher harmonics of a geomagnetic field influence the trajectories of cosmic-ray particles. The anisotropic motion of cosmic rays is associated with asymptotic directions. These directions can be found by solving the potential of the geomagnetic field by means of six harmonic spherical functions. The solution was based on two maps of the geomagnetic field with isolines of its components. The one

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Card 1/2 UDC: 523.165

L 16023-66

ACC NR: AP6006654

map was compiled by the Institute of Terrestrial Magnetism, Ionosphere, and Propagation of Radio Waves and the other by the British Admiralty. Asymptotic directions for the real and dipole fields were computed for two stations—Mirnyy in Antarctica and Tiksi Bay on the shore of the Arctic Ocean. Results obtained at Tiksi coincided for both fields, but at Mirnyy the results are 20° apart. Asymptotic directions of particles of low hardness in a real magnetic field coincide with those in a dipole field. Stormar's asymptotic directions pass through the dipole's center, and each direction is associated with a shock-wave zone. Stations located in the second shock-wave zone receive particles of hardness lower than 1.1 Bv. These stations receive a narrow cone of solar radiation particles when they are located in the main shock zone. The angle of intersection of the ecliptic with the earth's equator is under 23.5°. A line was found, the effective asymptotic latitude of which for solar radiation may be equal to 25° when the asymptotic directions of the dipole coincide with those of the real field and are shifted with the force lines in longitude. Results of computations are given in a table in the original article for various hardnesses. Orig. art. has: 5 figures, 3 formulas, and 1 table. [EG]

SUB CODE: 04/ SUBM DATE: 17Dec64/ ORIG REF: 002/ OTH REF: 009/ ATD PRESS: 4102

Card 2/2

L 20463-66 EWT(1)/FCC/EWA(h) GW

ACC NR: AP6012056 SOURCE CODE: UR/0203/65/005/005/0809/0816

AUTHOR: Asaulenko, L. G.; Dorman, L. I.; Smirnov, V. S.; Tyasto, M. I.

ORG: Polar Geophysical Institute, Kola Branch, AN SSSR (Polyarnyy geofizicheskiy institut Kol'skogo filiala AN SSSR)

TITLE: Effect of limitation of the geomagnetic field on cosmic rays

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 5, 1965, 809-816

TOPIC TAGS: geomagnetic field, cosmic ray, solar wind, magnetic storm

ABSTRACT: The earth's magnetic field, at least in the direction of the sun, is limited and its extent is dependent on the density and energy of particles in the solar wind. This article discusses the effect of compression of the magnetosphere caused by the solar wind on the cutoff rigidities and asymptotic directions of cosmic rays. Limitation of the magnetosphere influences cosmic rays not only in the period of the initial phase of a magnetic storm, but also when the magnetic field is quiet. It is demonstrated that the compression leads to intensification of the influence of the magnetic field on cosmic rays and that the joint effect of limitation of the magnetosphere and the westerly current system leads to attenuation of the influence of external sources both on cutoff rigidity and on asymptotic directions. The authors thank the workers of the Computer Center, Kola Branch, AN SSSR for programming the problems and calculations on the electronic computer. Orig. art. has: 3 figures, 9 formulas, and 3 tables.

SUB CODE: 08, 03, 04 / SUBM DATE: 14Sep64 / ORIG REF: 004 / OTH REF: 013

Card 1/1

L 20464-66 EWT(1)/FCC/EWA(h) GW

ACC NR: AP6012117 SOURCE CODE: UR/0203/65/005/005/0910/0913

AUTHOR: Dorman, L. I.; Miroshnichenko, L. I.

ORG: Institute of Terrestrial Magnetism, the Ionosphere and Radio Wave Propagation

TITLE: Determination of the duration of emission of solar cosmic rays from the generation region

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 5, 1965, 910-913

TOPIC TAGS: cosmic ray, solar radiation, solar corona, solar chromosphere

ABSTRACT: A diffusion model usually is used in the investigation of the propagation of solar cosmic rays in interplanetary space. The density change of solar particles in space and change with time is described approximately by a nonhomogeneous equation of the parabolic type. A solution is easily obtained. Source density is the quantity of particles emitted from the source (from the region of generation) in a unit time and in general is a function of ε_{kin} and t. It is determined by the character of generation of particles on the sun and their propagation in the solar corona and supercorona. At present there is no detailed information on the character of the dependence of f on ε_{kin} and t (f is source density); it is only known that f (ε_{kin}, t) rapidly attains a maximum after the onset of a chromospheric flare and then drops off steeply approximately exponentially. In the case of low energies

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f(ε kin, t) can be drawn out considerably in time, which is partly responsible for the considerable lag of low-energy particles. Expressions are derived for approximating f. Since recent data indicate the possibility of accumulation of low-energy solar particles in interplanetary space in years of high solar activity, the authors have investigated the nonhomogeneous parabolic diffusion model equation in combination with their proposed expression for f for the case when emission occurs uniformly over a finite interval of time. With an increase of T (emission period) the maximum of the density curve is displaced in the direction of larger values t. The density increase occurs quite smoothly and the decrease after the maximum is quite steep. When $t \gg T$ the density decrease conforms to the diffusion law $\sim t^{-3/2}$; this is applicable to an instantaneous source. In the case of prolonged emission density increases to a maximum more slowly and then begins to decrease much more rapidly. The results make it possible to use the temporal variation of intensity change of solar cosmic rays to determine the duration of their emission from the region of generation. They also show that for study of the duration of emission of solar cosmic rays it is most important to have detailed measurements of the particle flux near the increase maximum, where the influence of T is manifested most strongly.

The authors thank Ye. A. Kornitskaya, T. L. Vinnikovaya, T. N. Utkinaya, and D. I. Fishchuk for carrying out the calculation. Orig. art. has: 7 figures, 8 formulas, and 1 table. [JPRS]

SUB CODE: 03, 04 / SUBM DATE: 29Dec64 / ORIG REF: 004 / OTH REF: 001

L 29263-66 EWT(1)/FCC GW

ACC NR: AP6019296 SOURCE CODE: UR/0203/65/005/004/0673/0678

AUTHOR: Dorman, L. I.; Ivanov, V. I.; Kolomeyets, Ye. V. 30 B

ORG: Kazakh State University im. S. M. Kirov (Kazakhskiy gosudarstvennyy universitet)

TITLE: Effects of small bursts in the hard component of cosmic rays on quiet and magnetically disturbed days

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 4, 1965, 673-678

TOPIC TAGS: cosmic ray shower, diurnal variation

ABSTRACT: This paper presents an analysis of cosmic ray bursts occurring on magnetically quiet and disturbed days. The bursts are classified into three groups. Statistical accuracy was increased by double averaging: by stations and for all bursts. Solar-diurnal variations were excluded. Data for 19 stations (210 bursts) were used (120 observations on magnetically quiet days and the others at the time of Forbush decreases. Orig. art. has: 4 figures and 1 table. [JPRS]

SUB CODE: 04 / SUBM DATE: 05Jun64 / ORIG REF: 008 / OTH REF: 003

Card 1/1 UDC: 523.165

L 29290-66 EWT(1)/FCC GW
ACC NR: AP6019301 SOURCE CODE: UR/0203/65/005/004/0760/0762

42
B

AUTHOR: Dorman, L. I.; Kolomeyets, Ye. V.; Pivneva, V. T.; Sergeyeva, G. A.

ORG: Kazakh State University im. S. M. Kirov (Kazakhskiy gosudarstvennyy universitet)

TITLE: Nature and energy spectrum of solar-diurnal and semidiurnal variations at the time of some Forbush effects

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 4, 1965, 760-762

TOPIC TAGS: diurnal variation, solar spectrum, cosmic ray intensity, geomagnetic field

ABSTRACT: This paper discusses solar-diurnal and semidiurnal variations on 1-2 November, 11-13 April 1960 and 29-30 April and 1 May 1962. The study was based on data from the world network of stations recording the neutron component of cosmic ray intensity, corrected for the barometric effect. The harmonic analysis was based on data corrected for the Forbush effect. The plotted data show that there is a clearly expressed diurnal variation of both cosmic rays and the geomagnetic field. Cosmic ray data have a well-expressed inverse correlation with the H component in the first two cases considered, when there were moderate magnetic storms; in the third case there was a direct correlation, when the geomagnetic field was restored after the Forbush effect. Analysis of the

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L 29290-66
ACC NR: AP6019301

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dependence of the time of the maximum of diurnal and semidiurnal variations on the cutoff energy revealed that the time of the maximum of the diurnal variation is displaced gradually to the early hours with an increase of cutoff energy. Nothing definite can be said concerning the phase of the semidiurnal variation. It is shown that the first two cases can be attributed to a close source and the third case can be attributed to a distant source. In these cases the energy spectra are somewhat different. In the case of a near source the spectrum is somewhat harder than for the case of a distant source. Orig. art. has: 2 figures and 1 table. [JPRS]

SUB CODE: 04, 08 / SUBM DATE: 13Aug64 / ORIG REF: 007 / OTH REF: 001

Card 2/2

L 30973-66 EWA(h)/EWT(1)/FCC GW

ACC NR: AF6018098 SOURCE CODE: UR/0203/66/006/002/0231/0240 34 B

AUTHOR: Dorman, L. I.

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

TITLE: Role of geometry of the solar system in cosmic ray variations observed at the earth

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 2, 1966, 231-240

TOPIC TAGS: geomagnetic field, cosmic ray, solar system, asymptotic property, cosmic ray anistropy, angular distribution

ABSTRACT: This paper consists of an introduction and eight parts. 1. Asymptotic directions in the geomagnetic field. 2. Asymptotic directions relative to the plane of the ecliptic. 3. Formation of diurnal variation at the earth despite its absence in interplanetary space. 4. Distortion of true anisotropy. 5. Possibilities of investigating the transverse gradient of cosmic ray intensity in interplanetary space and seasonal variations. 6. Effect of ellipsoidal configuration of the earth's orbit. 7. Effect of noncoincidence of the plane of the ecliptic and the plane of the sun's equator. 8. Transformation of the diurnal and semidiurnal variations symmetrical to the sun's equator. It is shown that allowance for the relative position of the earth and sun and their axes of rotation makes it possible to obtain additional information on the angular distribution and transverse gradient of cosmic ray intensity in interplanetary space. The author considers geometrical effects leading to the modulation of solar-diurnal and sidereal-diurnal variations and to the formation of annual and semiannual cosmic ray variations. Orig. art. has: 34 formulas. [JPRS]

Card 1/1 SUB CODE: 03, 04, 08/SUBM DATE: 04May65/ORIG REF: 007/OTH REF: 003

L 39675-66 EWT(1)/EWA(h)/FCC GW/GD-2
ACC NR: AF6018097 SOURCE CODE: UR/0203/66/006/002/0215/0222

AUTHOR: Dorman, L. I.; Miroshnichenko, L. I.

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

TITLE: Method for determining the spectrum of solar cosmic rays in the high-energy region

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 2, 1966, 215-222

TOPIC TAGS: cosmic ray, cosmic ray shower, cosmic ray measurement, solar radiation, ionization chamber, solar spectrum

ABSTRACT: This paper presents the results of computations of the integral multiplicity of generation for a neutron monitor and an ionization chamber. The computations for the neutron monitor were made using the latitude effect of the neutron component at sea level. The integral multiplicity of generation for the ionization chamber was computed on the basis of the latitude effect of the burst of 23 February 1956. On the basis of the computed generation multiplicities the authors determined the spectrum of solar cosmic rays at the boundary of the atmosphere for the burst of 23 February 1956 in the region of rigidities 1-15 BeV. The orig. art. has: 3 figures and 27 formulas. [JPRS]

SUB CODE: 03, 04 / SUBM DATE 04Jan65/ ORIG REF: 005/ OTH REF: 011/

Card 1/1

ACC NR: AP7007046 SOURCE CODE: UR/0203/66/006/004/0782/0785

AUTHOR: Alaniya, M. V.; Dorman, L. I.; Shatashvili, L. Kh.

ORG: Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation, AN SSSR (Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR); Institute of Geophysics, AN GruzSSR (Institut geofiziki AN GruzSSR)

TITLE: Mathematical expectation of the distribution of the harmonic coefficients when determining them using 12 ordinates and comparison with experimental results

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 4, 1966, 782-785

TOPIC TAGS: diurnal variation, cosmic ray

SUB CODE: 04

ABSTRACT: The method of harmonic analysis is used frequently in investigation of stellar-diurnal, solar-diurnal, semidiurnal and other cosmic ray variations of a periodic character. The frequency distributions of the amplitudes and phases of the first and second harmonics of solar-diurnal variations show that the amplitude and phase of the harmonics have a definite distribution caused by two factors of a different physical nature: 1) actual changes of electromagnetic conditions in interplanetary space and in the earth's magnetosphere, determining periodic variations of cosmic rays; 2) fluctuations of the values of cosmic ray intensity caused primarily by errors of a statistical and instrumental character. The purpose of this paper is to determine the relative importance of the first and second factors. The quantitative solution of this problem is important for study of diurnal variations

Card 1/2 UDC: 523.165

ACC NR: AP7007046

over short intervals of one or two days, especially in analysis of changes of the diurnal variations from day to day and in periods of Forbush decreases. In this paper emphasis is on the second factor -- its influence on the frequency distribution of amplitude and phase of the first harmonic in a harmonic analysis using 12 ordinates. It is shown that comparison of the theoretical and experimental results makes it possible to then determine the contribution of the first factor. The results obtained in this paper can be generalized easily for the case of determining harmonics using any number of ordinates. Orig. art. has: 2 figures and 7 formulas. [JPRS: 38,677]

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ACC NR: AP7008936 SOURCE CODE: UR/0203/66/006/005/0922/0923

AUTHOR: Dorman, L, I.; Kovalenko, V. A.
ORG: Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation, AN SSSR. (Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR); Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation, SO AN SSSR. (Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln SO AN SSSR)
TITLE: Method for introducing barometric corrections into data on cosmic ray intensity
SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 5, 1966, 922-923
TOPIC TAGS: cosmic ray intensity, cosmic ray
SUB CODE: 04
ABSTRACT:
It now is customary to define the relation between cosmic ray intensity and pressure at the level of observation by the expression

$$I = I_0 \exp\left[-\beta(h - h_0)\right] \qquad (1)$$

where I and I_0 are the intensities of cosmic rays at the pressures h and h_0 respectively; β is the barometric coefficient. However, strictly speaking, formula (1) is not precise. The fact is that the barometric effect consists of two parts: a) a negative absorption effect, characterizing the decay and absorption of the secondary component of cosmic rays in the atmosphere; b) a positive effect caused by the change of the

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generation of the secondary component. In general, the quantitative relation of these effects changes with a change of h. The barometric coefficient β is a function of h and is determined by the expression

$$dI/dh = \beta(h). \qquad (2)$$

From (2), with the boundary condition $I|_{h = h_0} = I_0$, it follows

$$I = I_0 \exp\left[\int_{h_0}^{h} \beta(h)\,dh\right] \qquad (3)$$

Using $\beta(h)$ (3) can be used for computing the anticipated changes I/I_0 for different cutoff rigidities R when $h_0 = 760$ mm Hg. These results for R = 3, 4.5, 6.4 and 9.5 BeV are given in a table. For comparison the same table gives the predicted changes I/I_0 for R = 3BeV, on the basis of formula (1) with constant β for $h = h_0$. The errors in this case for Δh = 10, 20, 30, 40, 50, 60 mm Hg are 0.1, 0.2, 0.4, 0.7, 1.4 and 2.1%. These errors are rather large in comparison with the accuracy of recording the neutron component by modern instruments. Orig. art. has: 3 figures and 1 table. [JPRS: 38,677]

ACC NR: AP7008940 SOURCE CODE: UR/0203/66/006/005/0959/0959

AUTHOR: Dorman, L. I.; Inozemtseva, O. I.

ORG: none

TITLE: Third all-union school of space physics

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 5, 1966, 959

TOPIC TAGS: solar wind, solar activity, cosmic ray, solar flare, supernova

SUB CODE: 03

ABSTRACT:

The Third All-Union School of Space Physics was held at Bakurani during the period 15-26 February 1966. It was sponsored by the Cosmic Rays and Radiation Belts Section of the Interdepartmental Geophysical Committee. Much of the work in organizing the school was done by the Academy of Sciences of the Georgian SSR and the Geophysical Institute at Tbilisi. It was attended by about 80 scientists from more than 20 Soviet observatories and institutes. The program covered a wide range of problems in space physics. A total of 39 lectures were presented on several themes. The first group of papers was devoted to the origin of cosmic rays and the acceleration of charged particles to great energies under different space conditions (in solar chromospheric flares, quasars, supernovae, and in the tail of the earth's magnetosphere). The main lecture was given by S. I. Syrovatskiy, who told in detail of the new mechanism of acceleration associated with the dissipation of magnetic fields. He demonstrated that the acceleration of particles can occur under very different physical conditions. How-

UDC: 002.704.31

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ever, most of the lectures were on the physics of cosmic rays and their variations. L. I. Dorman gave a classification of variations and their possible reciprocal interference and discussed the problems of the nature of cosmic ray variations of different types. On the basis of data on the 11-year and 27-day variations of cosmic rays it now has been possible to estimate the dimensions of the region of the solar wind and their change with the cycle of solar activity. It is found that on the assumption of a spherically symmetrical model the radius of the region of modulation, attaining about 100 a.u. at the maximum of solar activity, decreases by about 2-3 times in the period of decline of solar activity. G. M. Nikol'skiy, V. V. Vitkevich, A. Z. Dolginova and V. I. Shishov discussed studies of the solar corona, solar wind and interplanetary magnetic fields by study of comets and use of radioastronomical methods. [JPRS: 38,677]

ACC NR: AP7000517 SOURCE CODE: UR/0048/66/030/011/1755/1759

AUTHOR: Blokh, Ya. L.; Dorman, L. I.; Kurnosova, L. V.; Razorenov, L. A.; Raychenko, L. V.; Suslov, A. A.; Fradkin, M. I.

ORG: none

TITLE: A study of time changes of nuclear flux in primary cosmic radiation on Elektron-2 and Elektron-4 satellites /Paper presented at All-Union Conference on Physics of Cosmic Rays held in Moscow from 15 to 20 November 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 11, 1966, 1755-1759

TOPIC TAGS: primary cosmic ray, cosmic ray measurement, cosmic ray intensity, meteorologic satellite, nucleon flux, neutron flux

ABSTRACT: Some results of a study of primary cosmic radiation conducted using the Elektron-2 and Elektron-4 satellites are given. An integral Cherenkov counter was placed in each satellite to measure fluxes of nuclei with energies greater than 600 Mev/nucleon. Those nuclei belonging to groups $Z \geq 2$, $Z \geq 5$, $Z \geq 15$ were measured by the Elektron-2, and those of group $Z > 20$ by the Elektron-4. Average flux values measured for the above groups of nuclei relative to the average flux values obtained during July 1964 are given in Fig. 1. The above data covers the period from 30 Jan 1964 through 9 Feb 1965. The fluxes

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ACC NR: AP7000517

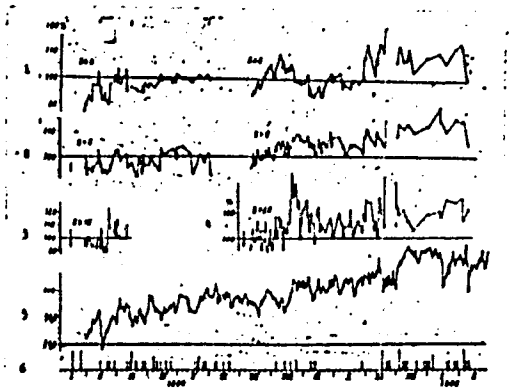

Fig. 1. Relative values of primary cosmic ray flux obtained by Elektron-2 and Elektron-4 satellites and by a ground station

1, 2, 3, 4 - Relative fluxes of nuclei with $Z \geq 2$, $Z \geq 5$, $Z \geq 15$ (right-hand graph) and magnitudes of statistical error of the mid-day values; 5, 6 - cosmic flux values obtained by the neutron monitor, and flux caused by chromospheric flares (the sizes of vertical lines correspond to flares of particles 1, 1^+, and 2) registered at the Climax ground station.

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ACC NR: AP7000517

measured at midday by the satellites are in close correlation with those measured by the ground stations for quiet ground conditions. It is noted that nuclear flux increased by a factor of 1.7—2 during the period from 1959 to 1964. During the same period the flux registered by a neutron monitor at the Climax ground station increased by about 20%. During 1964—1965 as was anticipated the nuclear flux increased by about 15% for nuclei with $Z \geq 2$ and $Z \geq 5$. The accuracy of measurements of the flux increase of nuclei with $Z > 20$ during the flight of the Elektron-4 satellite was impaired by several rises in flux and by significant statistical errors. Orig. art. has: 3 figures.

[WA-75]
[IV]

SUB CODE: 04, 18/20/ SUBM DATE: none/ ORIG REF: 007/
OTH REF: 007

Card 3/3

ACC NR: AP7013721 SOURCE CODE: UR/0203/65/005/006/1099/1102

AUTHOR: Dorman, L. I.; Mazaryuk, Ye. A.

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

TITLE: Complex amplitude-phase modulation of periodic cosmic ray variations

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 6, 1965, 1099-1102

TOPIC TAGS: cosmic ray, amplitude modulation, phase modulation, solar variation, earth rotation, solar telescope, cosmic ray telescope

SUB CODE: 04,03,17

ABSTRACT: Earlier studies by L. I. Dorman have discussed the simultaneous amplitude-phase modulation of periodic cosmic ray variations which occurs with a period much greater than the basic period. Dorman also has used experimental data on the solar-diurnal variation obtained with crossed telescopes and a neutron monitor to investigate the satellites, determine the modulation parameters and detect the true sidereal-dournal wave. In these studies it was assumed that there

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ACC NR: AP7013721

is one kind of amplitude-phase modulation with a definite period (one year). However, in actuality the phenomenon is far more complex, when there is modulation of the periodic variation simultaneously with several periods. This modulation is related primarily to the rotation of the earth about the sun (with a period of about one year) and the rotation of the sun on its axis (with a period of about 27 days). In a general case the dependence of intensity on time for such complex modulation can be represented in the form

$$f(t) = A_0/1 + \delta_{a_1} \sin(\omega_1 t + \varphi_{a_1})//1 + \delta_{a_2}\sin(\omega_2 t + \varphi_{a_2})/ \times \sin /\omega_0 t + \varphi_0 + \delta_{f_1} \sin(\omega_1 t + \varphi_{f_1}) + \delta_{f_2}\sin(\omega_2 t + \varphi_{f_2})/,$$

where A_0, ω_0, φ_0 are the amplitude, frequency and phase of the principal wave; ω_1 and ω_2 are the modulating frequencies; δa and δf is the intensity of amplitude and phase modulation; φ_a and φ_f are the phases of the amplitude and phase modulation. The authors then expand f(t) into satellites). It is shown that with an increase of the order of the satellites their amplitude decreases sharply in comparison with the amplitude of the main wave. Therefore, at present, due to the relatively low accuracy of experimental data, it scarcely makes sense to use satellites of a higher order than indicated in the article for finding the modulation parameters. The authors thank O. I. Inozemtseva for discussion of the results. Orig. art. has: 1 figure and 2 formulas. [JPRS: 34,593]

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ACC NR: AP7002197 SOURCE CODE: UR/0203/66/006/006/1096/1098

AUTHOR: Dorman, L. I.

ORG: Institute of Terrestrial Magnetism, Ionosphere, and Propagation of Radio Waves, AN SSSR (Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR)

TITLE: The barometric effect of cosmic rays with variation of the primary spectrum and the rigidity cutoff taken into account

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 6, 1966, 1096-1098

TOPIC TAGS: barometric coefficient, cosmic ray, magnetic storm, solar cosmic ray, ~~[illegible]~~, magnetosphere, primary cosmic ray, cosmic ray intensity, atmospheric pressure

ABSTRACT: A correlation between the barometric coefficient of cosmic rays and the energy spectrum of the primary rays, and the coefficient's variation during magnetic storms and the arrival of solar cosmic rays on the earth are established. An attempt is made to associate the barometric effect with the change of the spectrum of primary rays and the rigidity cutoff caused by the instability of the terrestrial magnetosphere. The integral equation for the cosmic ray intensity at a selected level with a constant pressure is given on the assumption that the energy spectrum and the ridigity cutoff are constant. The variation of the intensity of cosmic rays is associated with a change in the barometric pressure. The final integral equation

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ACC NR: AP7002197

for the intensity of cosmic rays can be solved by successive approximations. Orig. art. has: 15 formulas. [EG]

SUB CODE: 04/ SUBM DATE: 25Mar66/ ORIG REF: 003/

ACC NR: AP7002198 SOURCE CODE: UR/0203/66/006/006/1098/1100

AUTHOR: Alaniya, M. V.; Dorman, L. I.; Shatashvili, L. Kh.

ORG: Institute of Terrestrial Magnetism, Ionosphere, and Propagation of Radio Waves, AN SSSR (Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR); Institute of Geophysics, AN GruzSSR (Institut geofiziki AN GruzSSR)

TITLE: Quasi-spiral changes of 27-day variation of cosmic rays with the solar activity

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 6, 1966, 1098-1100

TOPIC TAGS: cosmic ray, magnetic field, interplanetary space, harmonic analysis, neutron component, solar activity, COSMIC RAY INTENSITY

ABSTRACT: It is pointed out that the eleven year variations of cosmic rays are usually determined from the mean monthly intensities of cosmic rays. However, the fine structure and the longitudinal distribution of cosmic rays cannot be determined from these data. Using the 27 day variation of cosmic ray intensities, the asymmetry of the magnetic inhomogeneities on the solar surface and their duration in the interplanetary space can be detected. The amplitude of the phase of the 27 day period of variations in the intensity of cosmic rays was determined by harmonic analysis from the mean values of the intensity of the neutron component. The obtained results are presented graphically. The graphs show that the amplitude of 27-day variation diminishes nonmonotonically with the solar activity, completing a full cycle (12 to

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18 solar rotations) at the minimum of solar activity. Thus, the 27 day variations of cosmic rays exhibit a spiral-shaped run. The spiral twists during the minimum of solar activity and untwists at its maximum. Variations of cosmic rays are caused by asymmetric fluxes of magnetic inhomogeneities. The asymmetry decreases with a decrease in solar activity. Orig. art. has: 2 figures. [EG]

SUB CODE: 04/ SUBM DATE: 08Dec65/ ORIG REF: 004/

ACC NR: AP7002199 SOURCE CODE: UR/0203/66/006/006/1101/1103

AUTHOR: Dorman, L. I.; Kolomeyets, Ye. V.; Sergeyeva, G. A.

ORG: Kazakh State University (Kazakhskiy gosudarstvennyy universitet); IZMIRAN

TITLE: Seasonal variations of solar diurnal and semidiruanl variations of cosmic rays

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 6, 1966, 1101-1103

TOPIC TAGS: cosmic ray, ecliptic plane, ~~cosmic~~ diurnal variation, solar variation, solar physics, COSMIC RAY INTENSITY, COSMIC RAY ANISOTROPY

ABSTRACT: The seasonal variations of solar diurnal and semidiurnal cosmic ray intensity were analyzed using the 1958—1962 data from the global network of stations. All stations of the network were divided into three zones on the basis of the mean cutoff energies: E = 1.5, 4.2, and 12.0 Bev. The mean solar diurnal variations representing the amplitudinal deviations from the mean yearly values were determined for each zone. The results obtained were tabulated and plotted on graphs. The change in the amplitudes was computed using harmonic analysis for annual and semiannual seasonal variations of amplitudes. In 1958, 1959, and 1960 these variations were equal at all latitudes; however, they were different at different latitudes in 1961 and 1962. It was established that two sources of anisotropy of cosmic rays, (tangential and radial) are almost always found at the same

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ACC NR: AP7002199

time. The intensity and the relative importance of each source varied considerably during the period of investigation. [EG]

SUB CODE: 04/ SUBM DATE: 06Sep65/ ORIG REF: 002/

DORMAN, M.I.; NIKOLAYEVSKIY, A.A.

New data on the geology of the Vilyuy syneclise. Geol. nefti i gaza 4 no.1:13-18 Ja '60. (MIRA 13:10)

1. Yakutskoye geologicheskoye upravleniye.
(Vilyuy Lowland--Geology)
(Prospecting--Geophysical methods)

88382

9.2587
9.3260 (a1501067)

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B012/B077

AUTHOR: Dorman, M. I.

TITLE: Characteristics of Oscillation Phenomena When the Frequency Passes Through the Zero Point

PERIODICAL: Radiotekhnika, 1960, Vol. 15, No. 10, pp. 27-32

TEXT: In the present work, the characteristics of the origin and the fine structure of the "zero beat" are investigated. For this purpose, the influence of two oscillations $e_1(t)$ and $e_2(t)$ upon a linear or nonlinear system with variable parameters is studied. It is assumed that the instantaneous frequencies of these oscillations are positive and can be represented as derivatives of the phases with respect to time. Only "zero beats" are investigated, and it is assumed that the load of the mixer is a low-frequency filter, and that the initial oscillations are not amplitude-modulated. The formula

$$\tilde{\Phi}(t) = \int_{t_0}^{t} \Omega(t)dt + \tilde{\Phi}_0 \quad (5)$$

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Characteristics of Oscillation Phenomena When the Frequency Passes Through the Zero Point

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clearly expresses the relation between the instantaneous phase $\Phi(t)$ of the resulting oscillation and the difference frequency $\Omega(t)$. Since the difference frequency is a steady function, also $\Phi(t)$ has to be steady; that is, there can be no jumps near $t = t_0$. $\Omega(t) = \omega_1(t) - \omega_2(t)$.

The function $\Phi(t)$ is investigated near the stationary point t_0. Two different cases can be distinguished if $\Omega(t)$ is considered an arbitrary function: 1) $\Omega(t)$ passes through zero without changing the sign; 2) the sign changes. It follows that $t = t_0$, the stationary point of $\Phi(t)$, is a point of inflection in the first case and a maximum or minimum in the second case. It is pointed out that the widely used representation of the frequency of difference oscillation by $|\omega_1(t) - \omega_2(t)|$ can only be applied to determine the absolute value of the difference frequency $|\Omega(t)|$ because the real characteristic of the change of the oscillation phase is not taken into consideration. It is noted that the two definitions of the frequency: 1) as a derivative of the phase and 2) as a positive quantity $2\pi/T$ are in some cases incompatible. As has been shown, the contradiction of such a double definition can be seen at the zero point. In order to change this, it is sufficient to take the first definition

Characteristics of Oscillation Phenomena When the Frequency Passes Through the Zero Point

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$\Omega(t) = d\xi(t)/dt$ as an exact definition of the frequency, and the second, $|\Omega(t)| = 2\pi/T$, as a definition of the absolute frequency value. It is pointed out that the sign of frequency has to be considered when investigating oscillation phenomena related to a passage of frequency through the zero point. The author thanks Professor I. S. Gonorovskiy for his suggestions. There are 4 figures.

SUBMITTED: February 24, 1960

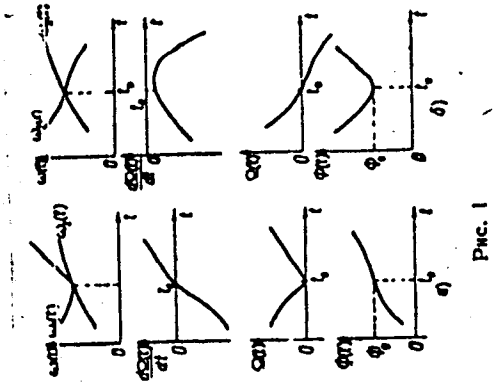

Fig. 1

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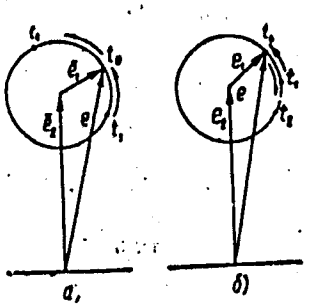

Рис. 2

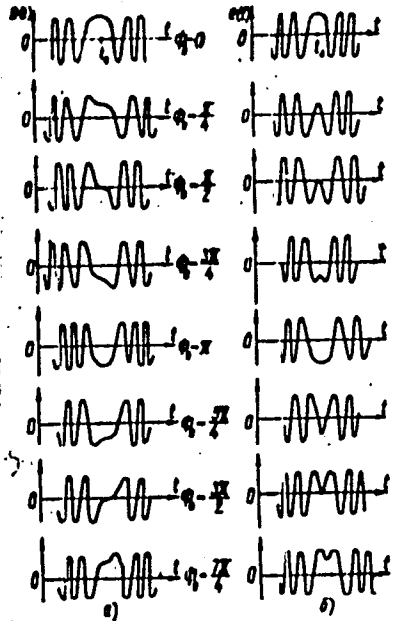

Рис. 3

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B010/B059

6.9000

AUTHOR: Dorman, M. I.

TITLE: Energy Spectra of Random Sequences of Overlapping Pulses

PERIODICAL: Radiotekhnika, 1960, Vol. 15, No. 12, pp. 50 - 52

TEXT: The energy spectra of random sequences of overlapping pulses can be calculated by conventional methods. The mathematical procedure is shown by an example. For a pulse-like random process without storage and overlap (in accordance with the terminology used by I. N. Amiantov and V. I. Tikhonov, "Radiotekhnika", Vol.14, No.4, 1959), the energy-spectrum formula (1) as given by B. R. Levin holds:

$$F(\omega) = \frac{2}{T}\left\{K(\omega) - |H(\omega)|^2 + \psi(\omega) + |H(\omega)|^2 \frac{2\pi}{T} \sum_{r=-\infty}^{\infty} \delta\left(\omega - r\frac{2\pi}{T}\right)\right\}$$ with the same notations that were used by B. R. Levin. However, with the amplitude condition $\xi_n^{(k)}(t) \equiv 0$, $t < 0$, which is practically always valid, (1) holds also for a pulse sequence with overlap. When calculating the terms

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of (1), difficulties may arise in evaluating $\psi(\omega)$. This can be avoided by considering that $R = R(pT) = \exp(-\alpha_o|p|T)$, $p = 0, \pm1, \pm2, \ldots$ holds for the correlation coefficient of background, R, when a low-pass filter with the damping coefficient α_o is present at the output. Thus, one has not to start from the homogeneous background spectrum in a certain frequency band Δ. This is demonstrated for a sequence of overlapping exponential video pulses with a random amplitude $\xi_n = a_o \cos \varphi_n$ which can be represented by the sum $\sum_n a_o \exp(-\alpha(t-t_n)) \cdot \cos \varphi_n$, where φ_n denotes the random value of phase. Assuming uniform distribution of φ_n within the interval $[0,2\pi]$, the expressions $K(\omega) = \frac{a_o^2}{2}|g(\omega)|^2$, $g(\omega) = \frac{1}{\alpha+i\omega}$,

$$Hp(\omega) = \frac{a_o^2}{2}|g(\omega)|^2 \exp(-\alpha_o \cdot |p|T), \quad H(\omega) = 0,$$

$$\psi(\omega) = a_o^2|g(\omega)|^2 \lim_{N\to\infty} \sum_{p=1}^{2N} (1-p/(2N+1)) \cdot H \cdot p(\omega) \cos p\omega T \text{ or, because of}$$

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Energy Spectra of Random Sequences of Over-lapping Pulses

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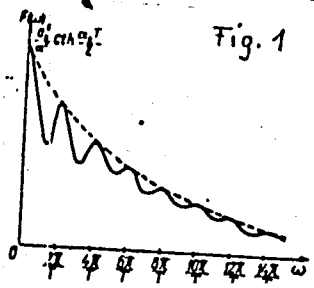
convergence of the series $\sum_{p=1}^{\infty} p \exp(-\alpha_o pT) \cos p\omega T \; \psi(\omega)$ $= \frac{a_o^2 |g(\omega)|^2}{2} \left(\frac{\mathrm{sh}\alpha_o T}{\mathrm{ch}\alpha_o T - \cos\omega T} - 1 \right)$, are obtained. The energy spectrum is given as $F(\omega) = \frac{a_o^2}{T(\alpha^2+\omega^2)} \frac{\mathrm{sh}\alpha_o T}{\mathrm{ch}\alpha_o T - \cos\omega T}$ (cf. Fig.1). The results of a second example with a similar pulse sequence are also given. There are 2 figures and 2 Soviet references.

SUBMITTED: June 20, 1960

Fig. 1



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24866

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9,3273

AUTHOR: Dorman, M.I.

TITLE: Spectrum of a wave, whose frequency passes through zero

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 7, 1961, 1076 - 1081

TEXT: The analysis of frequency modulation and of the response to it of linear systems has been extensive, e.g. by I.S. Gonorovskiy, A.A. Kharkevich and others. In considering these problems it is usually assumed that the change in the instantaneous frequency occurs within a range far removed from zero frequency. In fact in many cases of the heterodyning frequency modulating signals the frequency may pass through its zero value. In the present article a fuller study of a frequency modulated wave with this respect is presented. A simple frequency modulated wave can be represented by

$$u(t) = U_0 \cos \int \Omega(t)\, dt. \qquad (1)$$

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Spectrum of a wave, ...

It has a constant amplitude U_o and an instantaneous frequency $\Omega(t)$ varying within the interval $(-T/2, T/2)$ according to

$$\Omega(t) = \Omega_o + 2\beta t \qquad (2)$$

or to

$$\Omega(t) = \Omega_o + 2\beta/t/, \qquad (3)$$

where Ω_o = const; $\beta = \Delta\omega_d/T$; $\Delta\omega_d$ - frequency deviation during time T/2. The voltage u(t) can be obtained by heterodyning the two frequencies with subsequent detection of the difference component. The analysis is made by studying the spectrum deformation due to the changes in Ω_o and $\Delta\omega_d$ for both Eqs. (2) and (3). From the odd property of Fresnel integrals it follows that

$$\lim_{/\omega/\to\infty} /G(\omega)/ = 0.$$

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The function /G(ω)/ is symmetrical with respect to $\omega = \Omega_0$ (Fig. 2). When $0 < \omega_d$ the instantaneous frequency $\Omega(t)$ crosses a zero value or "zero beats" are formed when $\Omega_0 = 0$ frequency $\Omega(t)$ is an odd function of time (Ref. 2: M.I. Dorman, Osobennosti kolebatel'nykh yavleniy pri prokhozhdenii chastoty cherez nul', Radiotekhnika, 1960, 15, 10, 27) and the spectrum density of zero beats is given by

$$G(\omega) = U_0 \sqrt{\frac{\pi}{2\beta}} \left\{ \cos\left(\frac{\omega^2}{4\beta} - \Phi_0\right) \left[C\left(\frac{\Delta\omega_д + \omega}{\sqrt{2\pi\beta}}\right) + C\left(\frac{\Delta\omega_д - \omega}{\sqrt{2\pi\beta}}\right) \right] + \right. \tag{8}$$
$$\left. + \sin\left(\frac{\omega^2}{4\beta} - \Phi_0\right) \left[S\left(\frac{\Delta\omega_д + \omega}{\sqrt{2\pi\beta}}\right) + S\left(\frac{\Delta\omega_д - \omega}{\sqrt{2\pi\beta}}\right) \right] \right\}.$$

The spectral density with $\Delta\omega_d \to \infty$ is found to be

$$|G(\omega)| = U_0 \sqrt{\frac{\pi}{\beta}} \sqrt{\cos^2\Phi_0 \cos^2\left(\frac{\omega^2}{4\beta} - \frac{\pi}{4}\right) + \to \ldots} \tag{15}$$
$$\ldots \to \sqrt{+ 2\sin^2\Phi_0 \left[\cos\frac{\omega^2}{4\beta} C\left(\frac{\omega}{\sqrt{2\pi\beta}}\right) + \sin\frac{\omega^2}{4\beta} S\left(\frac{\omega}{\sqrt{2\pi\beta}}\right) \right]^2}.$$

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Spectrum of a wave,....

for near zero frequency

$$|G(\omega)| \simeq U_0 \sqrt{\frac{\pi}{\beta}} \left| \cos \Phi_0 \cos\left(\frac{\omega^2}{4\beta} - \frac{\pi}{4}\right) \right|,$$

and for $\omega \longrightarrow \infty$

$$|G(\omega)| \simeq U_0 \sqrt{\frac{\pi}{\beta}} \left| \cos\left(\frac{\omega^2}{4\beta} - \frac{\pi}{4}\right) \right|.$$

it follows that in this case the dependence of spectral density on initial phase takes place only at low frequencies. The way in which a frequency modulated wave acts upon a filter network is analyzed assuming the frequency response $K(\omega)$ of the filter in the form of a rectangle and determining the energy E produced by the wave at the filter output for large $\Delta\omega_d$. According to Rayleigh's theorem this energy is

$$E = \frac{U_0^2}{\beta} \int_{\omega_0 - \Delta\omega_0}^{\omega_0 + \Delta\omega_0} \cos^2\left(\frac{\Omega_0^2 + \omega^2}{4\beta} - \Phi_0 - \frac{\pi}{4}\right) d\omega.$$

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It depends not only on the rate of change of frequency and on the pass-band of the system but also on the initial phase and position of the passband or the frequency axis. The energy will not depend either on initial phase or ω_0 but only when $\omega_0 \gg \sqrt{\pi\beta}$ and $\Delta\omega_0 \ll \omega_0$. The other limiting case is $\omega_0 = 0$ (low pass filter) and $\Delta\omega_0/\sqrt{\pi\beta} \ll \ll 1$. Then taking the first few terms of Taylor's series for

$$S\left(\frac{\Delta\omega_0}{\sqrt{\pi\beta}}\right), \quad \text{and} \quad C\left(\frac{\Delta\omega_0}{\sqrt{\pi\beta}}\right)$$

$$E \simeq \frac{\Delta\omega_0 U_0^2}{\beta}\left[1 + \sin\left(\frac{\Omega_0^2}{2\beta} - 2\Phi_0\right)\right]. \qquad (18)$$

is obtained, showing a strong dependence of energy at the output on φ_0, Ω_0 and also on ω_0 and $\Delta\omega_0/\sqrt{\pi\beta}$. There are 4 figures and 4 Soviet-bloc references.

SUBMITTED: October 17, 1960

Card 5/6

33775
S/108/62/017/001/002/007
D271/D304

9,3273 (1040,1159)

AUTHOR: Dorman, M.I.

TITLE: The reaction of an inertial system to zero beats

PERIODICAL: Radiotekhnika, v. 17, no. 1, 1962, 13 - 21

TEXT: When the center frequency of an FM signal is close to the local oscillator frequency, zero beats occur which are complex processes containing the sum and difference of mixing frequencies; the author aims at elucidating, by analytical means, the process of stimulating reaction which take place at the output of a linear, frequency dependent, inertial system exposed to zero beats, with the purpose of aiding the analysis of transmission of FM signals in selective circuits of multi-channel systems. Only the difference frequency component is considered, and only two inertial systems: Low-pass RC filter and single-tuned circuit; the rate of frequency change is assumed relatively high and mixer selective system is assumed with a narrow pass-band. In a low-pass RC filter the response to a single zero beat is expressed by

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The reaction of an inertial system ...

$$U(t)\approx\begin{cases}\frac{\alpha U_0}{2\beta t_0}\frac{t\cdot e^{-\alpha t}}{t-t_0}\sin\varphi_0, & t<t_0,\\ \alpha U_0\sqrt{\frac{\pi}{\beta}}\,e^{-\alpha t}\cos\psi_0+\frac{\alpha U_0 e^{-\alpha t}}{2\beta}\left\{\frac{\sin\varphi_0}{t_0}+\frac{\sin\left[\beta(t-t_0)^2+\psi_0-\frac{\pi}{4}\right]}{t-t_0}\right\}, & t>t_0;\end{cases}\quad(5)$$

(5)

and the response of a single-tuned circuit is

$$U(t)\approx\begin{cases}\frac{\Omega_p U_0}{2\beta t_0}\frac{t\cdot e^{-\alpha t}}{t-t_0}\sin\Omega_p t\sin\varphi_0, & t<t_0,\\ \Omega_p U_0\sqrt{\frac{\pi}{\beta}}\,e^{-\alpha t}\sin\Omega_p t\cdot\cos\psi_0+\frac{\Omega U_0 e^{-\alpha t}}{2\beta}\sin\Omega_p t\left\{\frac{\sin\varphi_0}{t_0}+\right.\\ \qquad\left.+\frac{\sin\left[\beta(t-t_0)^2+\psi_0-\frac{\pi}{4}\right]}{t-t_0}\right\}; & t>t_0,\end{cases}\quad(6)$$

where: α is 1/RC for the RC filter and $\Omega/2Q$ for the tuned circuit; β is the rate of frequency change; t_0 - the instant, in which beat

Card 2/[illegible]

The reaction of an inertial system ...

frequency becomes zero; φ_0 - phase angle between beating frequencies at t_c. $\Psi_c = \varphi_0 - \beta t_c + \pi/4$. When passband of the filter is narrow and the rate of frequency change high, the response to a single zero beat is constituted by a single free damped oscillation train, with an initial amplitude dependent on the phase angle φ_0 (or Ψ_0). When the inertial system is stimulated by a sequence of zero beats, its response is a sum of responses to all single zero beats preceding the considered time point. The analysis shows that the response of a low-pass RC filter consists of a damped transient oscillation and a quasi-stationary component. Dependent on the frequency deviation, modulation frequency and the value of α, the response may be aperiodic, either in the strict meaning of the word, or by virtue of having a period much greater than that of the modulating frequency. When filter pass-band is relatively wide, the response is a series of equidistant pulse trains with cosine amplitude modulation. If, however, the pass-band is relatively narrow, a superposition of many single-beat reactions is obtained. The analysis of this case leads to the conclusion that the power spectrum of the response can

Card 3/3 4

The reaction of an inertial system ...

be of two types, dependent on the relation between the frequency deviation and the modulating frequency. If their ratio is not an integer, the power spectrum is composed of two classes of spectral lines symmetrically positioned around zero frequency; the spacing between lines in each group is equal to the modulating frequency and the envelope is determined by the response to a single zero-beat. (Fig. 8). When frequency deviation is a multiple of the modulating frequency, the two classes of lines merge. The response of a single-tuned circuit is analyzed in a similar manner. The output is in this case composed of transient and quasi-stationary processes, of a periodic or near-periodic character, with a period which may greatly exceed that of the modulating signal. When pass-band is wide, a sequence of separate radio frequency wave trains is obtained with a cosine amplitude modulation. If, however, the pass-band is narrow, the separate wave-trains merge and a complex superposition of many responses to single-beat stimulations is obtained. Power spectrum is similar to that derived for the low-pass RC filter. There are 11 figures and 3 Soviet-bloc references.

SUBMITTED: September 3, 1960 (initially)
January 24, 1961 (after revision)

Card 4/4

[redacted]

BORMAN, M.I.

Some special features of the energy spectrum of pulse-type random processes. Izv. vys. ucheb. zav.; radiotekh. 7 no. 3:390-393 My-Je '64. (MIRA 17:9)

[redacted]

ACCESSION NR: AP4014529 S/0103/64/019/002/0017/0027

AUTHOR: Dorman, M. I.

TITLE: Transmission of white noise by some circuits with a stepwise parameter change

SOURCE: Radiotekhnika, v. 19, no. 2, 1964, 17-27

TOPIC TAGS: stepwise changing circuit, noise, white noise, white noise transmission, variable parameter linear system

ABSTRACT: A theoretical study of the effect of a white noise on variable-parameter linear systems of the first order is presented. Specifically, it is assumed that the equivalent circuit of such a system consists of a constant capacitance and a piecewise-constant resistance (taking on either R_1 or R_2 value). The correlation function and dispersion of the noise at the system output are found and investigated. Formulas for these particular cases are developed: (1) A

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ACCESSION NR: AP4014529

narrow-band system and a high modulation frequency; (2) A wideband system and a low modulation frequency; (3) The system passband varies widely in the process of modulation, and the pulse duty factor is low. Orig. art. has: 6 figures and 33 formulas.

ASSOCIATION: none

SUBMITTED: 08Jun62 DATE ACQ: 02Mar64 ENCL: 00

SUB CODE: CO, GE NO REF SOV: 006 OTHER: 001

Card 2/2

AUTHORS: Dorman, S.G. (Chief Designer), and Khvatov, V.I. 130-3-12/22

TITLE: Lengthening the input roller tables of a blooming mill. (Udlinenie priyemnykh rol'gangov bluminga).

PERIODICAL: "Metallurg" (Metallurgist), 1957, No.3, pp.22-24. (U.S.S.R.)

ABSTRACT: Defects in the ingot-conveying system were hampering the achievement of higher productivity at the Magnitogorsk blooming mills and the present article describes the work carried out to remove these defects. The work involved the lengthening of the input tables of both the blooming mills by about 30 m. The work was complicated by the fact that it had to be completed within three days. The procedure adopted had as its main features: 1) the use of prefabricated ferro-concrete blocks with a volume of 30 m3 and a weight of 75 tons each for the foundations of the table and ingot-dumper; 2) the use of a special device with a lifting capacity of 75 tons and mounted on the metalwork of the soaking pits crane for placing the blocks and the large pre-assembled sections of the tables; 3) the completion of a foundation-trench for the future table before the start of the work. The operation was completed in time and secured the anticipated improvement in ingot-conveying. The organization adopted is recommended for other works. There are 3 diagrams, 1 photograph.

Card 1/1

ASSOCIATION: Planning Department of the Magnitogorsk Metallurgical Combine. (Proyektnyy otdel Magnitogorskogo Metallurgicheskogo Kombinata).

AVAILABLE:

ZUDIN, V.M.; SAGAYDAK, I.I.; YAKOBSON, A.P.; BABARYKIN, N.N.; DORMAN, V.G.; GALATONOV, A.L.; LEKIN, P.V.

Preparation of screened sinter and its use in blast furnace smelting. Stal' 22 no.8:675-679 Ag '62. (MIRA 15:7)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Sintering)
(Blast furnaces--Equipment and supplies)

DORMAN, YA. A.

Oct 48

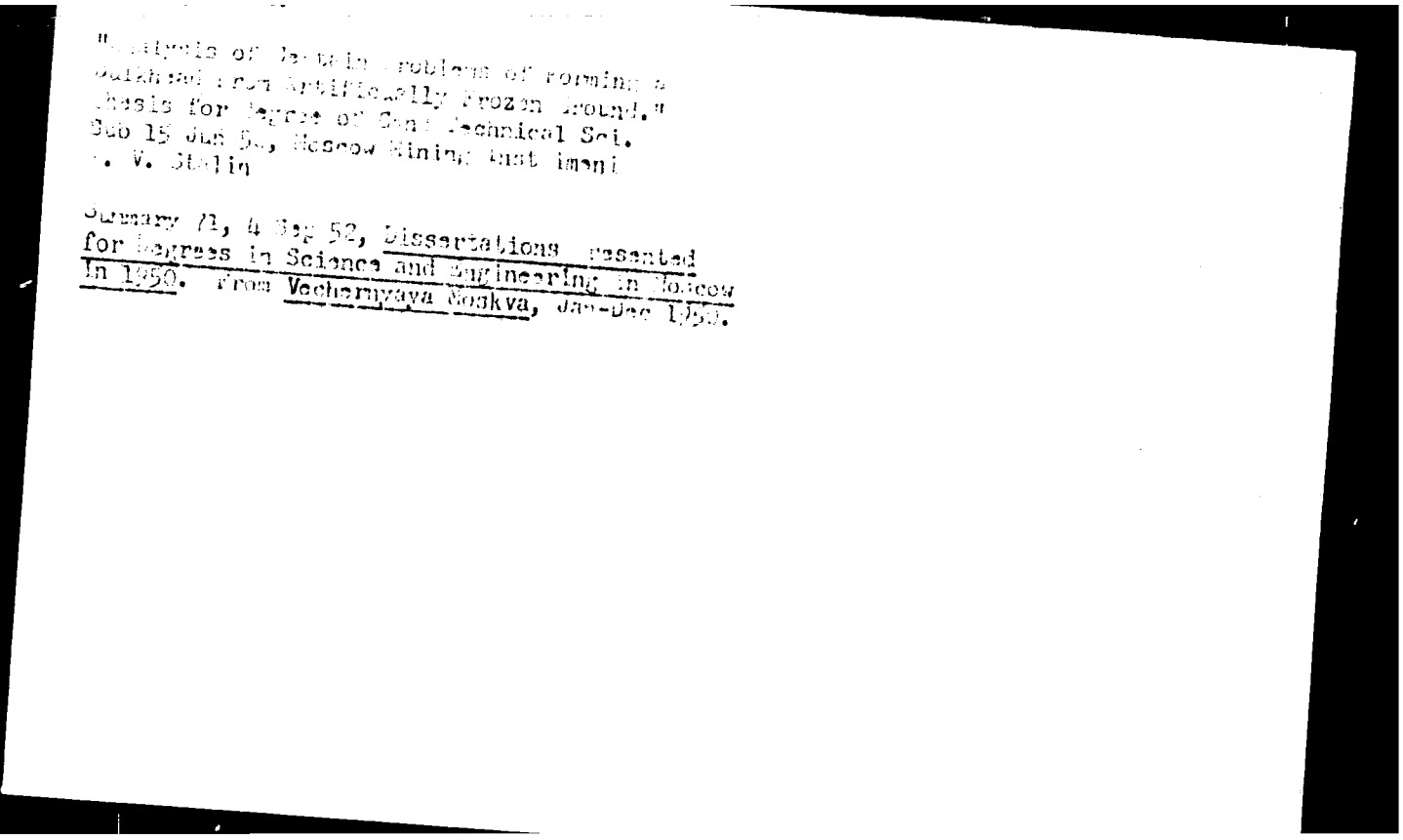
USSR/Mining Methods
Excavating Machinery

"Review of N. G. Trupak's Book, 'Sinking Shafts by the Refrigeration Method,'" Ya. A. Dorman, A. V. Baronenkov, Mining Engineers, 1 p

"Gor Zhur" No 10

Method has been used for 65 years. However, Trupak's book is first to attempt a comprehensive coverage. Unfortunately, it has many defects. Published by Ugletekhizdat, 1947, 246 pp, 163 ill, 4,000 copies, price 23 rubles 50 kopeck.

16/49T105



"[illegible] of Certain Problems of Forming a Bulkhead from Artificially Frozen Ground," Thesis for Degree of Cand Technical Sci. Sub 15 Jun 52, Moscow Mining Inst imeni I. V. Stalin

Summary #1, 4 Sep 52, Dissertations presented for Degrees in Science and Engineering in Moscow In 1952. From Vechernyaya Moskva, Jan-Dec 1952.

DORMAN, Ya. A

Use of artificial cold for freezing ground. Khol. tekh, 29, No 2, 1952.

TRUPAK, N.G.; DORMAN, Ya.A., redaktor; SANOVICH, P.O., redaktor; ALADOVA, Ye.I., tekhnicheskiy redaktor

[Soil freezing in shaft sinking] Zamorazhivanie gornykh porod pri prokhodke stvolov. Moskva, Ugletekhizdat, 1954. 894 p. (MLRA 8:3)
(Shaft sinking) (Soil freezing)

STENING, A.I., inzh.; DORMAN, Ye.I., inzh.

Reclamation boilers of the Taganrog Boiler Plant. Prom.energ. 14 no.3: 27-38 Mr '59. (MIRA 12:4)
(Taganrog--Boilers)

DOMEN, Ye.I., inzh.; SHCHERBIN, F.I., inzh.

Corrosive effect of gases used in the waste heat boilers of the sulfuric acid industry. Prom. energ. 20 no.10:20-25 O '65.

(MIR 18:10)

ALIMOV, Arif Alimovich; DORMANOV, I.Ye., red.; MALIKOVA, L.A., red.; DORODNOVA, L.A., tekhn.red.

[The Uzbek S.S.R.; story about the seven-year plan] Uzbekskaia SSR; rasskaz o semiletke. Moskva, Vses.uchebno-pedagog.izd-vo Proftekhizdat, 1960. 100 p. (MIRA 13:10)

1. Predsedatel' Soveta ministrov Uzbekskoy SSR (for Alimov).
(Uzbekistan--Economic policy)

CHUPAKHIN, Vasiliy Mikhaylovich; DORMENKO, Vladimir Vladimirovich; DRYAMOV, S.I., dots., retsenzent; MOLDAVSKIY, G.Ye., dots., retsenzent; TERENT'YEV, A.V., kand. tekhn. nauk, spets. red.; KUZ'MINA, V.S., red.

[Technological equipment of fish processing plant] Tekhnologicheskoe oborudovanie ryboobrabatyvaiushchikh predpriiatii. Izd.2., perer. i dop. Moskva, Pishchevaia promyshlennost', 1964. 566 p. (MIRA 18:2)

USSR/ Electronics - Radio receivers

Card 1/1 Pub. 89 - 9/21

Authors : Dormidontov, A.

Title : The radio receiver "Dnepropetrovsk"

Periodical : Radio 7, 23 - 25, Jul 1955

Abstract : The structural and circuit characteristics of a second class, six-tube superheterodyne radio receiver "Dnepropetrovsk" are described. The receiver operates on an AC voltage of 110, 127 and 220 v and is intended for the reception of radio broadcasts transmitted over long, medium and short waves. Special attachment is provided for record players. Tables; diagrams; illustrations.

Institution : .....

Submitted : .....

DORMIDONTOV, A., inzh.; KUKHARENKO, V., inzh.

"IUpiter" and "Signal" transistor radios. Radio no.8:49-51 Ag '65.
(MIRA 18:7)

DORMIDONTOV, A., inzh.

The "Lastochka" radio receiver. Radio no.5:29-30 My '63. (MIRA 16:5)

(Transistor radios)

DORMIDONTOV, A.A.

[redacted]

[Influenza and allergic conditions similar to it in young children] Grippoznye zabolevaniia i allergicheskie formy grippopodobnykh sostoianii u detei rannego vozrasta. Sverdlovsk, Medgiz, 1946. 84 p. (MLRA 6:9)
(Influenza) (Allergy)

DORMIDONTOV, A. A.

Dormidontov, A. A., Layenson, R. Ye. Suyetina, P.V. and Pevzner, M.A. "Treatment of rickets," Trudy VI Vsesoyuz. s'yezda det. vrachey, posvyashch. pamyati prof. Filatova, Moscow, 1948, p. 227-32

SO: U-3264, 10 April 1953, (Letopis 'Zhurnal 'nykh Statey, No. 3, 1949)

DORMIDONTOV, A.A. and BORODINA, G. M.

"Severe Case of Ascaridiasis", Med. Paraz. i Paraz. Bolez., Vol. 17, No. 2, pp 181, 1948.

DORMIDONTOV, A.S.

27672 Vliyanie tiomocheviny na funktsiyu shchitovidnoy zhelezy, na rost I polovyyu diferentsirovku U lebistes reticulatus. trudy laboratorii osnov rybovodstva, T. II, 1949, s. 195-200. ---Bibliogr: 12 nazv.

SO: Knizhnaya Letopis, Vol. 1, 1955

DORMIDONTOV, A.S.

Characteristics of the distribution of coregonid fishes of the Lena River on their feeding grounds. Vop. ikht. 1 no.3:453-461 '61. (MIRA 14:11)

1. Yakutskoye otdeleniye Gosudarstvennogo nauchno-issledovatel'skogo instituta ozernogo i rechnogo rybnogo khozyaystva - Gos. NIORKH.
(Lena River—Whitefishes)

BUZIK, Valentin Filippovich; DORMIDONTOV, F.K., redaktor; KOFTOROVICH, A.I., tekhnicheskiy redaktor

[Intershop operational planning and production accounting in shipbuilding plants] Mezhtsekhovoe operativnoe planirovanie i uchet proizvodstva na sudostroitel'nykh zavodakh. Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl., 1955. 85 p. (MLRA 9:10)
(Shipbuilding)

BUZIK, Valentin Filippovich; BYAKOV, Miron Romanovich; URETSKIY, Moisey Lazarevich; ENROL'D, Valentina Nikolayevna; DORMIDONTOV, F.K., otvetstvennyy redaktor; KONTAROVICH, A.I., tekhnicheskiy redaktor; KAMOLOVA, V.M., tekhnicheskiy redaktor

[Work rhythm and uniformity in shipbuilding] Ritmichnost' i ravnomernost' sudostroitel'nogo proizvodstva. Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl., 1956. 111 p. (MLRA 9:9)
(Shipbuilding)

GREBEL'SKIY, Petr Khaimovich; KEZNIK, Meer Khaimovich; DORMIDONTOV, F.K., otvetstvennyy redaktor; KOMOLOVA, V.M., tekhnicheskiy redaktor

[Mechanic's manual on the technology of fitting ship installations and equipment] Spravochnik slesarja-dostroishchika po tekhnologii montazha sudovykh ustroistv, del'nykh veshchei i oborudovaniia pomeshchenii. Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl., 1956. 171 p. (MIRA 10:1)
(Shipbuilding)

DORMIDONTOV, F.K.

BUBNOV, Ivan Girgor'yevich; SHIMANSKIY, Yu.A., akademik, redaktor; DORMIDONTOV, F.K., nauchnyy redaktor; FRUMKIN, P.S., tekhnicheskiy redaktor

[Selected works] Izbrannye trudy. Pod red. i s predisl. IU.A. Shimanskogo. Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl., 1956. 438 p. (MIRA 10:1)
(Shipbuilding)

YASHCHURZHINSKIY, Boris Viktorovich; DORMIDONTOV, F.K., nauchnyy redaktor; FRUMKIN, P.S., tekhnicheskiy redaktor

[Loading equipment of seagoing vessels] Gruzovye ustroistva morskikh sudov. Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl. 1956. 365 p. (MLRA 10:2)
(Loading and unloading) (Ships--Equipment and supplies)

DORMIDONTOV, F.K., inzhener.

The Swedish National Shipbuilding Testing Basin in Goteborg.
Sudostroenie 22 no.3:43-45 Mr '56. (MLRA 9:8)
(Goteborg--Shipbuilding)

DORMIDONTOV, F.K., inzhener.

The Sperry stabilizer (From "Marine Engineering" ne.10; 1955)
Sudostroenie 22 ne.5:47-49 My '56. (MIRA 9:9)
(United States--Stability of ships)

DORMIDONTOV, F. K.

KOVTUN, Aleksandr Danilovich; DORMIDONTOV, F.K., redaktor; DLUGOKANSKAYA, Ye.A., tekhnicheskiy redaktor.

[Photographic measurement of ships for the establishment of theoretic hull and propeller contour] Primenenie fotografii dlia s"emki s natury teoreticheskikh obvodov korpusov sudov i grebnykh vintov. Leningrad, Gos.soiuznoe izd-vo sudostroit.promyshl. 1956. 117 p.

(MLRA 10:4)

(Photography) (Shipbuilding)

DORMIDONTOV, F.K., inzhener.

Floating elevator platform (from "Dock and Harbour Authority," April, 1956). Sudostroenie 22 no.11:48 N '56. (MLRA 10:2)

(United States--Floating cranes)

SHEDLING, Feliks Maksimilianovich; DORMIDONTOV, F.K., redaktor; VOLCHOK, K.M., tekhnicheskiy redaktor

[Painting in ship building and repairing] Maliarnye raboty v sudostroenii i sudoremonte; posobie dlia maliarov po okraske dereva. Leningrad, Izd-vo "Rechnoi transport," Leningr. otd-nie, 1957. 79 p. (MLRA 10:10)
(Ships--Painting)

DORMIDONTOV, F.K.

PHASE I BOOK EXPLOITATION 286

Grigor'yev, Aleksandr Andreyevich, Sidorenkov, Anatoliy Nikolayevich.

Mestnyye svarochnyye deformatsii tonkolistovykh konstruktsiy i meropriyatiya po ikh umen'sheniyu (Local Deformations of Welded Thin-sheet Structural Elements and Ways of Minimizing Them) Leningrad, Sudpromgiz, 1957. 127 p. 3,000 copies printed.

Scientific Ed.: Dormidontov, F.K.; Tech. Ed.: Levochkina, L.I.

PURPOSE: The book is intended for designers, technicians, and skilled workers who participate in the development of methods used in the fabrication of thin-sheet welded structures.

COVERAGE: The special features of local welding deformations in thin-sheet structures are considered, as well as the influence of various design and technological factors on the magnitude of the deformations. Suggestions are given on ways of minimizing local deformations for consideration in the design and preparation of thin-sheet structures; specific examples are presented for the selection of the elements of thin-sheet structures and of the optimum sequence in their preparation.

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Local Deformations of Welded Thin-sheet Structural (Cont.)

The authors consider some of their conclusions not final; they state that additional theoretical and experimental research is required. The data mentioned in the book are the result of theoretical investigation and of observations and measurements of deformations which occurred in the manufacture of industrial designs. In addition, some results of the investigations of Professor N.O. Okerblom, Doctor of Technical Sciences, and I.P. Baykovaya, Candidate of Technical Sciences, were used. Chapters I, III, and V were written by A.N. Sidorenkov, chapters II, IV, and VI by A.A. Grigor'yev. The book contains 76 figures and 13 references, all USSR.

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Local Deformations of Welded Thin-sheet Structural (Cont.)

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Local Deformations of Welded Thin-sheet Structural (Cont.)

References

AVAILABLE: Library of Congress (TS227.G795)

Card 8/8

MLM/lsb
May 27,1958

DORMIDONTOV, F.K., inzh.

Lateral ship stabilizer rudders of the Sperry type. Sudostroenie 22 [i.e.23] no.10:57 O '57. (MIRA 11:2)
(United States--Steering gear)

GREBEL'SKIY, Petr Khaimovich, REZNIK, Meyer Khaimovich, DORMIDONTOV, F.K., otv.red.; TSAL, R.K., tekhn.red.

[Installation of metal appointments in ships] Montazh metallicheskogo oborudovniia sudovykh pomeshchenii. Leningrad, Gos. soiuznoe izd-vo sudostroit. promyshl., 1958. 126 p. (MIRA 11:9)
(Shipfitting)