85538

S/026/60/000/009/003/010
A166/A029

17.7000

AUTHOR: Yarov-Yarovoy, M.S.

TITLE: Automatic Devices of High Accuracy and Reliability

PERIODICAL: Priroda, 1960, No. 9, p. 5

TEXT: The automatic braking device of the second Soviet space ship braked it somewhat in orbit and the ship began to descend. As it came lower it encountered increasingly denser atmosphere layers which increased the braking effect, causing, however, overheating of the surface to very high temperatures. A reliable system of heat-proofing was therefore needed. When a certain speed was reached the animal container was catapulted free and landed safely with the animals intact and unharmed. The ship had a built-in television control system and a superaccurate system for orientating the ship in space so that it could be landed at the scheduled point on earth.

ASSOCIATION: Gosudarstvennyy astronomicheskiy institut imeni. P.K. Shternberga (State Astronomical Institute imeni P.K. Shternberg), Moscow

Card 1/1

23688
S/035/61/000/004/006/058
A001/A101

3,1420

AUTHOR: Yarov-Yarovoy, M. S.

TITLE: The interpolation-analytical theory of motion of Ceres

PERIODICAL: Referativnyy zhurnal. Astronomiya i Geodeziya, no. 4, 1961, 12-13, abstract 4A173 ("Tr. Gos. astron. in-ta im. P. K. Shternberga", 1960, v. 28, 25-90)

TEXT: This work represents the application of the interpolation-averaged variant of the N. D. Moiseyev three-point problem to the determination of an intermediate orbit of the particular celestial body, minor planet Ceres. The observational data on its normal positions from 1801 to 1938 were used from the works of G. Hill, E. Rabe and V. F. Proskurin in the ready form. The author investigates perturbations of canonical elements very close to the first system of Poincare canonical elements:

$$x_1 = k\sqrt{a}, \qquad y_1 = M + \omega + \Omega - l_j,$$
$$x_2 = k(\sqrt{a} - \sqrt{p}), \qquad y_2 = l_j - \omega - \Omega,$$
$$x_3 = k(\sqrt{p} - \sqrt{p}\cos\gamma), \qquad y_3 = l_j - \Omega,$$

Card 1/4

The interpolation-analytical theory ...

where γ is mutual inclination of the orbits of Ceres and Jupiter, Ω is ascending node of the Ceres orbit with respect to the Jupiter orbit, l_j is mean longitude of Jupiter in the orbit. The difference from Poincare elements consists in that all three generalized momenta contain l_j. The characteristic function looks as follows:

$$\Omega = \frac{k^4}{2x_1^2} + \eta_j (x_1 - x_2 - x_3) + k^2 m_j W_j,$$

where $W_j = 1/\Delta - \cos \gamma / r_s^2$ is perturbation function. The averaging of the characteristic function is performed with respect to x_2 and x_3, and then W_j is averaged with respect to y_3. As a result of averaging, function Ω depends on

$$\lambda = x_1 + l_2 x_2 + l_3 x_3,$$

$$\mu_1 = y_1 + m_3^{(1)} y_3,$$

$$\mu_2 = y_2 + m_3^{(2)} y_3,$$

where l_2, l_3, $m_3^{(1)}$, $m_3^{(2)}$ are constants which are determined by the methods of the correlation theory from statistical processing of empirical data. Variables

The interpolation-analytical theory ...

λ; μ_1, μ_2 are named by the author interpolation elements. The ortho-interpolation condition has the form:

$$1 + l_3 m_3^{(1)} = 0, \qquad l_2 + m_3^{(2)} l_3 = 0,$$

and quantities l_2, l_3 and $m_3^{(1)}$, $m_3^{(2)}$ are determined by the same formulae as in the circular restricted problem of three points. Terms of the second order in e, l_j and $\eta = \sin \gamma/2$ are preserved in the perturbation function. Under all these conditions, generalized coordinates x_1, x_2, x_3 will have secular perturbations of the order $k^2 m_j$ and y_1, y_2 and y_3 periodical perturbations containing factors $k^2 m_j l_j$. To construct the practical interpolation-analytical theory of Ceres motion, the author determines from empirical data interpolation elements λ, μ_1 and μ_2 and checks the condition of ortho-interpolation. To do this, he determines from observations (normal positions) a series of osculating elements from which he calculates constants l_2, l_3, $m_3^{(1)}$, $m_3^{(2)}$, average values of preliminary elements x_1, x_2, x_3, y_1, y_2, y_3, and the average value of perturbation function W_j. Initial values of elements were compared with normal positions, and then these initial values were improved and compared again with the normal positions. The obtained approximate intermediate theory of Ceres motion describes the observa-

Card 3/4

S/035/61/000/004/006/058
A001/A101

The interpolation-analytical theory ...

tions used with the root-mean-square error of 98" in direct ascension and 115" in declination. There are 20 references.

N. Yakhontova

[Abstracter's note: Complete translation]

Card 4/4

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78030
SOV/33-37-1-30/31

AUTHOR: Yarov-Yarovoy, M. S.

TITLE: Review. E. Finlay-Freundlich, Celestial Mechanics, Pergamonn Press, 1958, 150 pp

PERIODICAL: Astronomicheskiy zhurnal, 1960, Vol 37, Nr 1, pp 188-190 (USSR)

ABSTRACT: This is a review of the book by Scotch astronomer Finlay-Freundlich giving the fundamentals of modern celestial mechanics. The book contains an introduction, two prefatory chapters, and six chapters of main text. The reviewer gives a brief abstract of each chapter and states that the book can be recommended as a preliminary introduction to the problems of celestial mechanics and as an additional course of studies of theoretical astronomy and celestial mechanics for student astronomers.

SUBMITTED: September 29, 1959

Card 1/1

3,1400

S/033/60/037/004/015/015/XX
E032/E314

AUTHOR: Yarov-Yarovoy, M.S.

TITLE: On the Explicit Expression of First-order Secular Perturbations in Terms of Elements

PERIODICAL: Astronomicheskiy zhurnal, 1960, Vol. 37, No. 4, pp. 764 - 777

TEXT: Using a general expansion of the perturbation function in accordance with the Newcomb method, a study was made of explicit expressions for the first-order secular perturbations in the form of series of powers of the eccentricities and sines of one-half of the mutual inclinations of the orbits. Analysis of the number of terms which are necessary in these expressions shows that the secular perturbations can be calculated just as rapidly with the aid of analytical formulae as by the Halphen-Goryachev method. However, the method proposed in the present paper has the advantage that it does not involve harmonic analysis and the residual terms can be estimated. Moreover, expansions are obtained for the perturbation function averaged only over the mean anomaly of the perturbing planet, or only the mean anomaly of the

Card 1/3

S/033/60/037/004/015/015/XX
E032/E314

On the Explicit Expression of First-order Secular Perturbations in Terms of Elements

perturbed planet, as well as in accordance with the Hill-Delauney scheme. As an example, first-order secular perturbations in the elements of Ceres due to the eight major planets are calculated. Numerical values of the secular perturbations were found to be very close to those obtained by Proskurin and Merfield (Ref. 8). Secular perturbations were also found empirically. In distinction to previous investigations the secular perturbation in the mean anomaly M was calculated in addition to the secular perturbations in the elements i, ω and Ω. It was found that the secular perturbations determined empirically agreed with the first-order secular perturbations derived from analytical formulae to within the limits of precision of the direct determination.

Acknowledgments are expressed to the Staff of the Chair of Celestial Mechanics and Gravimetry of MGU for valuable discussions.

Card 2/3

S/033/60/037/004/015/015/XX
E032/E314

On the Explicit Expression of First-order Secular Perturbations in Terms of Elements

There are 5 tables and 8 references: 7 Soviet and 3 English.

ASSOCIATION: Gos. astronomicheskiy in-t imeni P.K. Shternberga (State Astronomical Institute imeni P.K. Shternberg)

SUBMITTED: November 10, 1959

Card 3/3

84931
S/033/60/037/005/016/024
E032/E314

3.1420 (1041,1080,1109)

AUTHOR: Yarov-Yarovoy, M.S.

TITLE: On the Application of Hansen's Ideal Coordinates

PERIODICAL: Astronomicheskiy zhurnal, 1960, Vol. 37, No. 5, pp. 908 - 917

TEXT: In various problems of celestial mechanics the perturbations are frequently determined analytically, not only in the orbit elements but also directly in the coordinates. Depending on the nature of the problem, the principal plane is taken to be either the plane of the orbit of the perturbing body or the plane of the unperturbed orbit of the perturbed body. The latter plane is then assumed to be stationary. Moreover, it is usual to assume that the plane of the osculating orbit of the perturbed body approaches the above principal plane. This assumption is, of course, only justifiable when secular and periodic perturbations in the longitude of the ascending node and the inclination, in a time interval in which the analytical theory of motion is being set up, are sufficiently small. This is particularly significant in the case of secular perturbations, since it is these perturbations which may give

Card 1/3

S/033/60/037/005/016/024
E032/E314

On the Application of Hansen's Ideal Coordinates

rise to an appreciable departure of the plane of the osculating orbit from the principal plane, and thus upset the underlying assumption, namely, that first-order perturbations relative to this plane are small. A consideration of special cases such as the motion of an asteroid, or an artificial Earth satellite, suggests that in such cases a rotating plane is best chosen as the principal plane. This plane should have the same secular motion as the plane of the osculating orbit. Among the various forms of solution of this type of problem, Hansen's coordinates appear to provide the best approach. Here, the plane of the osculating orbit is taken to be the principal plane and it can be shown that the above perturbations simply vanish, and the introduction of the so-called mean elements ensures that the secular term in the longitude will also be zero. It is shown in the present paper that this approach ensures that first-order perturbations are small. The derivations of the corresponding formulae are very similar to those given by Hansen himself in Ref. 1. Thus, integral equations are obtained for the perturbations both in the orbit elements which determine the

84931

S/033/60/037/005/016/024
E032/E314

On the Application of Hansen's Ideal Coordinates

position of the plane of the osculating orbit, and the ideal rectangular coordinates in this plane for large and small values of the inclination. Integral equations are also derived for the perturbations in the ideal polar coordinates which can be employed if either time or the true anomaly in unperturbed motion are used as the integration variables. The method can be employed to construct an analytical theory of motion for both artificial and natural celestial bodies. Acknowledgments are expressed to the staff of the Chair of Celestial Mechanics and Gravimetry of Moscow State University for valuable suggestions. There are 1 figure and 7 references: 4 Soviet, 1 English, 1 French and 1 German.

ASSOCIATION: Gos. astronomicheskiy in-t imeni P.K. Shternberga
(State Astronomical Institute imeni P.K.Shternberg)

SUBMITTED: December 15, 1959

Card 3/3

39312
S/035/62/000/007/012/083
A001/A101

3,2200

AUTHOR: Yarov-Yarovoy, M. S.

TITLE: On series determining the motion of a satellite

PERIODICAL: Referativnyy zhurnal, Astronomiya i Geodeziya, no. 7, 1962, 18, abstract 7A128 ("Soobshch. Gos. astron. in-ta im. P. K. Shternberga", 1961, no. 111, 15 - 38)

TEXT: Differential equations of motion of a satellite around an oblate planet are reduced to three differential first-order equations for Delon's variables G, l, g, if integrals of energy and areas existing in this problem are made use of. Solution of equations is sought for in the form of series in powers of coefficients of expanding the planet potential by Legendre polynomials. Coefficients of these power series are polynomials with respect to v_o, sin v_o, cos v_o, where v_o is true anomaly in unperturbed motion. The following results are presented without derivation: 1) The series of the form under consideration converge for a time span $|t - t_o| < 114$ days for an orbit with $e = 0.15$, $i = 65^o$ and perigee altitude over the Earth's surface equal to 225 km; 2) the series

Card 1/3

S/035/62/000/007/012/083
A001/A101

On series determining the motion of a satellite

converge for the time span $|t - t_0| < 454$ days, if canonic Poincaré's variables are used instead of Delone's variables: L, λ, ξ_1, ξ_2, η_1, η_2; 3) the series converge for the time span $|t - t_0| < 251$ days, if Hansen's ideal coordinates are used as variables. Hansen's method is employed for the actual calculations of first-order perturbations of the radius-vector and true longitude of the satellite. Perturbations are also calculated for all orbital elements as functions of unperturbed anomaly. The problem on the relation between arbitrary constants in a Hansen's type theory and in the formulae for element perturbations is considered. First-order secular perturbations of all elements arising from the second, third and fourth zonal harmonics of the planet potential are calculated, as well as second-order secular perturbations arising from the second zonal harmonic in elements a, e, i. A secular term emerges in second-order perturbations of major semi-axis, if perturbations are expressed in terms of true anomaly; this term disppears with transition to mean anomaly. The secular third-order perturbation of major semi-axis in respect to a coefficient at the second zonal harmonic of the planet potential has been also calculated. This perturbation turns into zero at $i = 63^\circ 25' 5''.7$ and $i = 68^\circ 35' 0''.0$. For an orbit with eccentricity value being 0.1, the maximum change in the major semi-axis on account of

Card 2/3

On series determining the motion of a satellite

S/035/62/000/007/012/083
A001/A101

the third-order secular perturbation amounts to 14.18 mm per day. There are 7 references.

Yu. Batrakov

[Abstracter's note: Complete translation]

4

Card 3/3

YAROV-YAROVOY, M. S.

"Integrating the equations of motion of a system of free mass points by the separation-of-variables method"

Report presented at the Conference on Applied Stability-of-Motion Theory and Analytical Mechanics, Kazan Aviation Institute, 6-8 December 1962

ACCESSION NR: AT4040745 S/2511/62/008/009/0647/0659

AUTHOR: Yarov-Yarovoy, M. S.

TITLE: A method for investigation of the translational and rotational motion of planetary satellites having axial symmetry

SOURCE: AN SSSR. Institut teoreticheskoy astronomii. Byulleten', v. 8, no. 9(102), 1962, 647-659

TOPIC TAGS: astronomy, celestial mechanics, planetary satellite, terrestrial potential, satellite motion

ABSTRACT: The author derives a new form of approximate representation of the earth's potential which precisely takes into account the second and third harmonics in its expansion. This representation involves a simple replacement of the earth's potential by the attraction of two fixed centers situated at a fictitious distance from one another and having complex conjugate masses. The new representation of the earth's potential also makes it possible to integrate in quadratures the problem of motion of a satellite without taking into account atmospheric resistance. It also is shown that the attraction of bodies having an axis of symmetry can be replaced with sufficient accuracy by the attraction of two pairs of material points whose masses and reciprocal distances are determined unambiguously. For approximate

Card 1/2

ACCESSION NR: AT4040745

solution of the problem of translational-rotational motion of two bodies, experiencing mutual attraction in conformity to Newton's law, the system of differential equations can be written the same as the differential equations in the unrestricted Newtonian problem of four material points. The simpler representation of the mutual attraction of two bodies presented by the author, for the case of bodies having axial symmetry, simplifies the right-hand sides of the differential equations of motion, thereby facilitating numerical integration. "This study was carried out in the Kafedra nebesnoy mekhaniki i gravimetrii fizicheskogo fakul'teta MGU (Department of Celestial Mechanics and Gravimetry, School of Physics, Moscow State University); the author thanks the staff for valuable comments." Orig. art. has: 60 formulas and 1 table.

ASSOCIATION: Institut teoreticheskoy astronomii AN SSSR (Institute of Theoretical Astronomy, AN SSSR)

SUBMITTED: 22Jul61 DATE SEL: 15Jul64 ENCL: 00

SUB CODE: AA NO REF SOV: 031 OTHER: 014

Card 2/2

YAROV-YAROVOY, M.S.

Conference on general and applied problems of celestial mechanics. Vest.Mosk.un.Ser.3.Fiz.,astron. 17 no.2:88-91 Mr-Ap '62.
(Mechanics, Celestial) (MIRA 16:2)

ACCESSION NR: AT4035345 S/2623/62/000/123/0003/0021

AUTHOR: Yarov-Yarovoy, M. S.

TITLE: Influence of atmospheric drag on satellite coordinates

SOURCE: Moscow. Universitet. Gosudarstvennyky astronomicheskiy institut. Soobshcheniya, no. 123, 1962, 3-21

TOPIC TAGS: artificial satellite, artificial satellite orbit, atmospheric resistance, artificial satellite coordinate, atmospheric density

ABSTRACT: The literature on atmospheric resistance (drag) in relation to artificial satellite motion is reviewed. Thirty-six papers are cited which discuss the secular changes of orbital elements of satellites almost without consideration of the influence of atmospheric drag on satellite coordinates. Twelve additional sources are cited which discuss the lifetime of artificial satellites with some discussion of atmospheric resistance on satellite coordinates. Eighteen sources are listed in which atmospheric density is determined on the basis of braking of satellites in the atmosphere. Five sources are indicated which note that the influence of atmospheric rotation is expressed primarily on orbital inclination. All these studies are characterized by the use of approximate methods; in this paper an attempt is made to study the problem rigorously. A general method is described

Card 1/2

ACCESSION NR: AT4035345

for determination of perturbations in satellite coordinates caused by the earth's flattening and atmospheric drag. In order to take into account atmospheric drag a scheme is considered in which general drag is replaced by the corresponding braking parameters at orbital perigee. This scheme quantitatively and qualitatively explains all the peculiarities in satellite motion for orbits with not excessively small eccentricity. "The author wishes to thank Professor G. N. Duboshin, Head of the Kafedra nebesnoy mekhaniki i gravimetrii MGU (Department of Celestial Mechanics and Gravimetry at Moscow State University) and Professor B. M. Shchigolev of that same department for valuable advice." Orig. art. has: 52 formulas and 2 figures.

ASSOCIATION: Gosudarstvenny*y astronomicheskiy institut, Moskovskiy universitet (State Institute of Astronomy, Moscow University)

SUBMITTED: 00 DATE ACQ: 26May64 ENCL: 00

SUB CODE: AA NO REF SOV: 018 OTHER: 056

Card 2/2

L 19330-63 EPA(b)/EWT(1)/FCC(w)/FS(v)-2/BDS/ES(t)-2/ES(v) AFFTC/AFMDC/
ESD-3/APGC/SSD Pd-4/Pe-4/Pg-4/Po-4/Pq-4 GW

ACCESSION NR: AR3002034 S/0269/63/000/005/0010/0010

SOURCE: RZh. Astronomiya. Otdel'nyy vypusk. Abs. 5.51.124

AUTHOR: Yarov-Yarovoy, M. S.

TITLE: The influence of atmospheric resistance on satellite coordinates

CITED SOURCE: Soobshcheniya Gosudarstvennogo astronomicheskogo instituta im. P. K. Shternberga, no. 123, 1962, 3-21

TOPIC TAGS: satellite coordinate, atmospheric resistance, nonspherical earth

TRANSLATION: The author describes a method for determining perturbations in the coordinates of a satellite which are caused by the nonspherical shape of the earth and by atmospheric resistance. To compute the atmospheric resistance, he proposes a model in which total resistance is replaced by the corresponding braking impulses at the orbital perigee. He asserts that the proposed model both qualitatively and quantitatively explains all peculiarities in the motion of satellites with orbits of not excessively small eccentricity. There is a bibliography of 74 items. From author's resume.

DATE ACQ: 30May63 SUB CODE: AI ENCL: 00

Card 1/1

SUBBOTIN, M.F., otv. red.; GREBENIKOV, Ye.A., kand. fiz.-matem. nauk, red.; DEMIN, V.G., kand. fiz.-matem. nauk, red.; DUBOSHIN, G.N., doktor fiz.-matem. nauk, zam. otv. red.; OKHOTSIMSKIY, D.Ye., red.; YAROV-YAROVOY, M.S., kand. viz.-matem. nauk, red.; NIKOLAYEVA, L.K., red. izd-va; SHEVCHENKO, G.N., tekhn. red.

[Problems of the motion of artificial celestial bodies]Problemy dvizheniia iskusstvennykh nebesnykh tel; doklady. Moskva, Izd-vo Akad. nauk SSSR, 1963. 294 p. (MIRA 16:2)

1. Konferentsiya po obshchim i prikladnym voprosam teoreticheskoy astronomii, Moscow, 1961. 2. Chlen-korrespondent Akademii nauk SSSR (for Subbotin, Okhotsimskiy).

(Artificial satellites) (Mechanics, Celestial) (Spaceships)

L 12612-65 EWT(1)/EWP(m)/FS(v)-3/EWG(v)/T-2 Pe-5/Pg-4/Po-4/Pq-4 GW

S/0026/63/000/012/0104/0106

ACCESSION NR: AP4006387

AUTHOR: Yarov-Yarovoy, M. S. (Candidate of physical-mathematical sciences)

TITLE: Evolution of planetary system

B

SOURCE: Priroda, no. 12, 1963, 104-106

TOPIC TAGS: celestial mechanics, solar system, gravitation, Newton law, celestial body motion, classical celestial mechanics, absolutely empty space, planetary orbit, secular perturbation, minor oscillation theory, secular equation, periodic oscillation, planetary evolution system, orbit inclination, perihelion, node line, orbit general relativity theory, planetary system major semiaxis, orbit eccentricity

ABSTRACT: The basic objective of celestial mechanics is the study of the movements of all points in the sun, the planets, the satellites, and all accompanying material. Consideration of mutual attraction and interaction of these points does not cover all the factors affecting the solar system. Mathematical methods do not yet permit complete solution of the problem. The author points out the effects of secular perturbation, which may be considered periodic, with periods ranging up to two million years. The largest disturbances have periods of about 120 000 years.

Card 1/2

2

The shortest periods are on the order of 50 000 years. Other modifying factors have similar effects. But, since these data result from evaluation by approximation methods, the picture of planetary motion is necessarily approximate. The question arises: is the picture the same for all segments of time? That is, will the eccentricity and inclination of planetary orbits always remain small, with the major semiaxis keeping (nearly) its present value? New mathematical methods offer some possibility of a solution to this problem. The Russian mathematician V. I. Arnol'd has examined the mathematical problem of motion of several points (like planets) with small mass moving about a massive central body (like the sun). By this method (not previously used in celestial mechanics) he has shown that the movement of the very small masses (planets), for almost all initial states, will always be similar to that defined by the secular perturbations of Lagrange. The mathematical "solar system" is thus stable. The author points out the importance of the general theory of relativity in studying the evolution of the planetary system, especially in regard to movement of the ecliptic. Orig. art. has: 2 figures and 2 tables.

ASSOCIATION: Gosudarstvennyy astronomicheskiy institut im. P. K. Shternberga (State Astronomical Institute)
SUBMITTED: 00
SUB CODE: AA
Card 2/2
NO REF SOV: 000
ENCL: 00
OTHER: 000

YAROV-YAROVOY, M.S., kand. fiziko-matematicheskikh nauk

"Criticism of Newton's laws and the plotting of Kepler's ellipse" by T.S. Abzianidze. Reviewed by M.S. IArov-IArovoi. Biul. VAGO no.33:53-55 '63. (MIRA 16:4)

1. Moskovskiy gosudarstvennyy universitet i Gosudarstvennyy astronomicheskiy institut imeni P.Ya. Shternberga, kafedra nebesnoy mekhaniki i gravimetrii.
(Mechanics, Celestial)
(Abzianidze, T.S.)

YAROV-YAROVOY, M.S. (Moskva)

Integration of Hamilton - Jacobi equations by the method of separation of variables. Prikl. mat. i mekh. 27 no.6:973-987 N-D '63.
(MIRA 17:1)

YAROV-YAROVOY, M.S.

Solution of the Euler - Lambert equation for flying orbits close to Homann orbits. Kosm. issl. 1 no.1:51-54 Jl-Ag '63. (MIRA 17:4)

YAROV-YAROVOY, M.S., kand. fiz.-matem. nauk

Evolution of the planetary system. Priroda 52 no.12:104-106 '63. (MIRA 17:3)

1. Gosudarstvennyy astronomicheskiy institut im. P.K. Shternberga.

L 61515-65 EWT(d) IJP(c)

ACCESSION NR: AR5016485 UR/0124/65/000/006/A006/A006

SOURCE: Ref. zh. Mekhanika, Abs. 6A36 10

AUTHOR: Yarov-Yarovoy, M. S. B

TITLE: On integrating the equations of motion for a material point by the method of separating the variables

CITED SOURCE: Tr. Mezhvuz. konferentsii po prikl. teorii ustoychivosti dvizheniya i analit. mekhan., 1962. Kazan', 1964, 64-69

TOPIC TAGS: motion equation, point motion, force equation, Hamilton Jacobi equation 16

TRANSLATION: The article presents a solution to the problem involving the methods of selecting generalized coordinates and the most general form of a force function at which the Hamilton-Jacobi equation, describing the spatial motion of a free material point, may be integrated by the method of separating the variables. V. I. Kirgetov

SUB CODE: MA ENCL: 00

Card 1/1

YAROV-YAROVOY, M.S.

Solution of regularized equations in perturbation theory. Dif. urav. 1 no.9:1204-1230 S '65. (MIRA 18:10)

1. Gosudarstvennyy astronomicheskiy institut imeni Shternberga.

YAROV, R.

Is the ring track not too narrow? Za rul. 21 no.8:22-23 Ag '63. (MIRA 16:11)

1. Spetsial'nyy korrespondent zhurnala "Za rulem".

BUDTOLAYEV, Nikolay Mikhaylovich; YAROVA, L.V., red.; TIKHONOVA, Ye.A., tekhn.red.

[Vsevolod Evgen'evich Timonov, an outstanding Russian hydraulic engineer] Vsevolod Evgen'evich Timonov - vydaiushchiisia deiatel' otechestvennoi gidrotekhniki. Moskva, Izd-vo "Morskoi transport," 1959. 63 p. (MIRA 12:6)
(Timonov, Vsevolod Evgen'evich, 1862-1936)

KHALIF, Semen L'vovich; YAROVA, L.V., red.; TIKHONOVA, Ye.A., tekhn.red.

[Practices of a layout man in a ship repair yard] Opyt razmetchika sudoremontnogo zavoda. Izd.2., dop. Moskva, Izd-vo "Morskoi transport," 1959. 80 p. (MIRA 13:1)
(Ships--Maintenance and repair)

BASEVICH, Vadim Viktorovich; YAROVA, L.V., red.; TIKHONOVA, Ye.A., tekhn.red.

[On seas of the Far East] Po dal'nevostochnym moriam; kratkii putevoditel'. Moskva, Izd-vo "Morskoi transport," 1959. 98 p. (MIRA 12:9)
(Soviet Far East--Shipping)

GAVRILENKO, Mikhail Borisovich; YAROVA, L.V., red.; SARAYEV, B.A., tekhn.red.

[Improved devices and attachments used in loading and unloading operations; working experience of the Leningrad harbor] Usovershenstvovannye ustroistva i prisposobleniia na pogruzochno-razgruzochnykh rabotakh; iz opyta raboty Leningradskogo porta. Moskva, Izd-vo "Morskoi transport," 1960. 42 p. (MIRA 13:9)
(Leningrad--Cargo handling)

PLYAVIN, Nikolay Ivanovich, kapitan dal'nego plavaniya; YAROVA, L.V., red.; TIKHONOVA, Ye.A., tekhn.red.

[Operation of seagoing tankers] Ekspluatatsiia morskogo tankera. Izd.2., dop. i ispr. Moskva, Izd-vo "Morskoi transport," 1960. 362 p. (MIRA 14:3)
(Tank vessels)

RUDNEV, A.P., otv. red.; YAROVA, L.V., red. izd-va; RASHEVSKAYA, Ye.Z., tekhn. red.

[Index of instructions and methodological directions and regulations on the inspection of measures and measuring instruments; in effect as of January 1, 1963] Ukazatel' instruktsii, metodicheskikh ukazanii i pravil po poverke mer i izmeritel'nykh priborov (po sostoianiiu na 1/1 1963 g.) Moskva, Standartgiz, 1963. 79 p. (MIRA 17:2)

1. Russia (1923- U.S.S.R.) Komitet standartov, mer i izmeritel'nykh priborov.

IVANOV, Leonid Aleksandrovich, inzh.-gidrograf, kand. geogr. nauk; MALYSHEV, Konstantin Ivanovich, inzh.-ekonomist; YAROVA, L.V., red.; TIKHONOVA, Ye.A., tekhn. red.

[Economics and organization of hydrographic works] Ekonomika i organizatsiia gidrograficheskikh rabot. Moskva, Izd-vo "Morskoi transport," 1963. 199 p. (MIRA 16:10)
(Russia, Northern--Hydrography)

YAROVA, L.V., red.

[Cold stamping dies fitted out with hard alloys; design and construction] Shtampy dlia kholodnoi shtampovki, osnashchennye tverdymi splavami; raschety i konstruirovanie (RTM 112-63). Moskva, Izd-vo standartov, 1964. 115 p. (MIRA 17:8)

1. Russia (1923- U.S.S.R.) Komitet standartov, mer i izmeritel'nykh priborov.

YAROVA, L.V., red.

[Rotary machines and lines; electric cutouts] Rotornye mashiny i linii; elektroprerыvateli (MN 5125-63-MN 5127-63). Moskva, Izd-vo standartov, 1964. 32 p. (MIRA 17:8)

1. Russia (1923- U.S.S.R.) Komitet standartov, mer i izmeritel'nykh priborov.

YAROVA, V. N.

"Bacteria of the Rhizosphere Which Decompose Tricalcium Phosphate." Cand Biol Sci, Moscow Agricultural Acad imeni K. A. Timiryazev, Moscow, 1954. (RZhBiol, No 8, Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (12)
SO: Sum. No 556, 24 Jun 55

YAROVA, Ye. I. ; M. O. RAYCHENBACH

"The Studies on Cancerolytic Properties of Blood Plasma in Conditions of Overstraining the Central Nervous System in Mice"

Arkhiv Patologii, 15:50-55, 1953, USSR

abs

B-80127, 2 Nov 54

YAROVA, Ye. M.

Rauchenbach, N. O. and Khokhlov, M. P.

"The Effect of Overstraining of the Central Nervous System on the Development of Experimental Leukemia"

Arch of Path 14;23-31, 1952, USSR

abs

B-80127, 2 Nov 54

Yurovaya, G.A.

Are adenosinetriphosphatase and myosin identical? V. A. Engel'gardt and G. A. Yurovaya (Inst. Biochem., Acad. Sci. U.S.S.R., Moscow). *Ukrain. Biokhim. Zhur.* 27, 312-23(1955)(in Russian).—The object of the expts. was to det. whether the properties of adenosinetriphosphatase (I) are those of myosin (II) or whether there is in II preps. a single specific and independent I which can not be obtained in a pure II-free state by any of the available methods of prepn. The expts. were performed with thrice-pptd. II of rabbit muscles. When the addn. of adenosine-triphosphate (ATP) to the II prepn. failed to lower its viscosity, the freedom of II from actomyosin was thought to have been established. The test was performed as follows: to 1 ml. of soln. of II contg. 3 mg. of protein/ml. was added 1 ml. soln. of polymerized actin (4 mg./ml.) directly in the viscosimeter at 20°. Control tests were made to det. the effect of temp. from 20 to 45° on the phosphatase activity of II and its ability to react with actin. Changes were detd. in the activity of I of II and its reactivity with actin at pH 4.0–10.0; changes in the I activity and its reactivity with actin at Cd-ion concns. of 0.1, 10^{-4}, 10^{-4}, 2×10^{-4}, 5×10^{-4}, and $10^{-3}M$; changes in I activity of II and its reactivity with actin at Ag-ion concns. of 0, 10^{-4}, 5×10^{-4}, 10^{-4}, and $10^{-3}M$. Results indicated that under all exptl. conditions changes in the properties of II to split ATP and to react with actin ran parallel courses qualitatively and quantitatively, although the data related to the changes in the enzymic activity were of a higher level than those related to reactivity with actin. An extensive theoretical discussion is presented as a result of which it is concluded that enzymic activity of I and reactivity with actin belong to one and the same protein presently known as II, but which should hereafter be called actomyosin. B. S. L.

YAROVAYA, G.A.

Biogeochemical provinces rich in molybdenum in the Armenian S.S.R. Trudy Biogeokhim. lab. no.11:208-214 '60. (MIRA 14:5)

1. Institut geokhimii i analiticheskoy khimii imeni V.I.Vernadskogo AN SSSR.
(ANKAVAN REGION—MOLYBDENUM) (KADZHARAN REGION—MOLYBDENUM)
(XANTHINE OXIDASE)

YAROVAYA, G. A., KOVALSKY, V. V., (USSR)

Alteration of Purine Metabolism in Animals and Man in Molybdenum-Rich Biogeochemical Areas.

report presented at the 5th Int'l. Biodhemistry Congress, Moscow, 10-16 Aug. 1961

KOVAL'SKIY, V.V.; YAROVAYA, G.A.; SHMAVONYAN, D.M.

Changes in the purine metabolism of man and animals under conditions prevailing in molydenum biogeochemical provinces. Zhur. ob. biol. 22 no.3:179-191 My-Je '61. (MIRA 14:5)

1. V.I.Vernadsky Institute of Geochemistry and Analytical Chemistry, U.S.S.R. Academy of Sciences.
(PURINE METABOLISM) (MOLYBDENUM--PHYSIOLOGICAL EFFECT)
(ARMENIA--GOUT)

YAROVAYA, G.A.

Effect of a high molybdenum content in the environment on purine metabolism in man. Trudy Un. druzh. nar. 7. Vop. med. no.1:44-57 '64. (MIRA 18:9)

1. Kafedra biokhimii Universiteta Druzhby Narodov imeni Patrisa Lumumby, Moskva.

MARDASHEV, S.R.; YAROVAYA, L.M.

Guanosine monophosphate-synthetase reaction of E.coli. Ukr.biokhim. zhur. 37 no.5:751-760 '65. (MIRA 18:10)

1. Institut biologicheskoy i meditsinskoy khimii AMN SSSR, Moskva.

YAROVAYA, N.T.

Developing vulcanizing conditions for automobile and agricultural casings in formators-vulcanizers.

Report presented at the Third All-Union Conference on Automation and Mechanization of major rubber production processes, Dnepropetrovsk, 2-6 Oct, 62

YAROVAYA, I.M.

USSR / Human and Animal Morphology (Normal and Pathological). S
Lymphatic System.

Abs Jour : Ref Zhur - Biol, No 21, 1958, No 97112

Author : Yarovaya, I.M.
Inst : Crimean Medical Institute
Title : Morphology of the Draining System of the Frontal Fontanelle.

Orig Pub : Tr. Krymsk. med. in-ta, 1957, 17, 43-48

Abstract : On the basis of data in literature and personal investigations of lacunae and liquid fissures of frontal fontanelle of 7-9 month old fetuses and children, the conclusion is made that the frontal fontanelle fulfills a draining function, participating in the regulation of intracranial pressure.

Card 1/1

MARDASHEV, S.R.; DEBOV, S.S.; YAROVAYA, L.M.

Biosynthesis of orotic acid from α-ureido- β-methylsuccinic and aspartic acids. Dokl. AN SSSR 134 no.3:713-716 S '60. (MIRA 13:9)

1. Pervyy Moskovskiy meditsinskiy institut im. I.M. Sechenova.
2. Deystvitel'nyy chlen AMN SSSR (for Mardashev).
(OROTIC ACID) (SUCCINIC ACID) (ASPARTIC ACID)

LUKIN, V.; YAROVAYA, N., studentka (Voronezh); KAZ'MIN, N.(Tambov); KATS, I.

Everyday affairs of volunteer firemen. Pozh.delo 9 no.2:6 F '63. (MIRA 16:3)

1. Nachal'nik uchebnogo punkta Leningradskogo oblastnogo i gorodskogo dobrovol'nogo pozharnogo obshchestva (for Kats).

32053
S/051/61/011/005/013/018
E202/E192

24.3950

AUTHORS: Shklyarevskiy, I.N., and Yarovaya, R.G.

TITLE: Optical properties of beryllium in the infrared region

PERIODICAL: Optika i spektroskopiya, v.11, no.5, 1961, 661-666

TEXT: Optical constants of high purity, vacuum deposited, opaque layers of beryllium in the region of 0.8 - 11 μ, and at 290 and 82 °K, were studied. Dispersion curves were plotted from the refractive index and absorption measurements at λ_B = 0.8 - 11 μ. These measurements were also carried out at 82 °K, using a cryostat described in Ref.6 (V.G. Padalka, I.N. Shklyarevskiy, Opt. i spektr., v.3, 361, 1957). The position and shape of the dispersion curves at 82 °K were substantially unchanged. The Hall constant R, and the statistical (hole) conductivity σ_o, measured on the same samples were found to be 5.6×10^{-3} e.m.u. and 1.3×10^{4} ohm^{-1} cm^{-1} respectively. It was also found that within the above spectral region, the properties of beryllium can be fully defined by the free current carriers.

Card 1/2

32053
S/051/61/011/005/013/018
E202/E192

Optical properties of beryllium ...

Using the formulae for the normal skin effect, and taking into consideration the quantum character of the interaction between the free carriers and the infrared radiation, the authors determined the concentration, effective mass and frequency of collisions between the carriers. Finally, it was shown that the temperature dependence of the optical properties of beryllium is determined by the frequency of these collisions.
There are 4 figures, 2 tables and 13 references: 7 Soviet-bloc and 6 non-Soviet-bloc. The English language references read as follows:

Ref. 1: D.G. Avery, Proc.Phys.Soc., v.B65, 425, 1952.
Ref. 4: G.K.T. Conn, G.K. Eaton.
Opt. Soc. Amer., v.44, 477, 1954.
Ref.12: R.W. Hill, P.L. Smith.
Phil. Mag., Ser. 7, v.44, 636, 1953.
Ref.13: M.H. Cohen, Phil.Mag., Ser.8, v.3, 762, 1958.

SUBMITTED: December 26, 1960

Card 2/2

S/051/63/014/002/011/026
E039/E120

AUTHORS: Shklyarevskiy, I.N., and Yarovaya, R.G.

TITLE: Elimination of the effect of oxide films on the results of measurements of the optical constants of aluminium

PERIODICAL: Optika i spektroskopiya, v.14, no.2, 1963, 252-255

TEXT: The kinetic growth of the layer of oxide on the surface of aluminium obtained by evaporation from a tungsten filament onto a glass plate in a vacuum chamber is investigated. The chamber is provided with two windows to enable the optical constants to be measured. A pressure of 5×10^{-5} mm Hg is maintained by means of an oil diffusion pump with a liquid nitrogen trap and a charcoal absorption pump. The optical constants are determined by the method of P. Drude (Wied. Ann., v.36, 1889, 865) using a mica $\lambda/4$ plate as a compensator. It is verified that the optical constants of the freshly evaporated Al surface do not change after ~8 hours under vacuum. These values are therefore taken as the optical constants for the oxide free surface. After exposure to atmosphere the thickness of the oxide layer and the optical constants are measured at intervals up to 100 hours. It is shown that the

thickness of the oxide film l^* varies with the logarithm of time $l^* = f(\log t)$. Thickness after 100 hours is 12 Å. Values of the optical constants are measured for a series of wavelengths from 450 to 650 mmk. Typical values of μ and μ_χ for oxide free Al are 0.41 and 4.06 at 450 mmk, increasing to 0.98 and 5.97 at 650 mmk. For an oxide layer of 12 Å thickness the respective values for μ' and μ'_χ, are 0.46 and 4.34 at 450 mmk, increasing to 1.13 and 6.38 at 650 mmk.
There are 2 figures and 1 table.

SUBMITTED: February 12, 1962

ACCESSION NR: AP4011488 S/0051/64/016/001/0085/0091

AUTHOR: Shklyarevskiy, I.N.; Yarovaya, R.G.

TITLE: Quantum absorption in aluminum and indium

SOURCE: Optika i spektroskopiya, v.16, no.1, 1964, 85-91

TOPIC TAGS: quantum absorption, photon absorption, infrared absorption, energy band structure, Brillouin zone, aluminum, indium, thin films

ABSTRACT: The optical constants - index of refraction and absorption coefficient - of thin aluminum and indium films were measured in the wavelength region from 0.4 to 2 microns. In the present paper there are reported only the results pertaining to quantum absorption associated with interband electron transitions. The results of measurement in the infrared region of the spectrum will be published elsewhere. The aluminum specimens were prepared by rapid deposition from a tungsten evaporator onto glass substrates at a pressure of about 2×10^{-5} mm Hg. The purity of the initial aluminum was 99.999%. In arriving at the final values for the refraction indices and absorption coefficients for the aluminum layers corrections were made for oxidation of the surface on the basis of the results obtained in an earlier investigation (I.

Card 1/2

ACC.NR: AP4011488

N.Shklyarevskiy and R.G.Yarovaya,Opt.i spektr.14,252,1963). The indium layers were prepared by evaporation from a molybdenum boat; the initial purity of the indium was 99.9999%. As in the case of the aluminum films, deposition was stopped prior to complete evaporation of the material from the boat. Some difficulties were encountered in preparing the indium layers, but it was found the smooth opaque specimens can be obtained by slow (about 1 minute) deposition under high vacuum onto glass substrates cooled to liquid nitrogen temperature. The indium films also oxidize, but so far it has not been possible to allow for the influence of the oxide films on the optical constants. The values of the index of refraction μ and the absorption $\mu\chi$ for aluminum in the wavelength range from 0.4 to 2 μ are tabulated as are the corresponding values for indium in the wavelength range from 0.475 to 0.96 μ. The variation of the optical constant with wavelength is also plotted. It was found that both the investigated metals have a quantum absorption band in the investigated spectral region, associated with interband electron transitions. In the case of aluminum this interband absorption can be separated from intraband absorption. The experimental data are discussed and compared with the results of calculations of the energy bands in aluminum, carried out by V.Heine (Proc.Roy.Soc. A240,340 & 361,1957) and W.A. Harrison (Phys.Rev.118,1182,1960). Orig.art.has: 4 formulas, 3 figures and 2 tables.

Card 2/2

ACCESSION NR: AP4020961 S/0051/64/016/003/0484/0490

AUTHOR: Lelyuk, L.G.; Shklyarevskiy, I.N.; Yarovaya, R.G.

TITLE: Optical properties of liquid mercury and gallium in the visible and near infrared regions of the spectrum

SOURCE: Optika i spektroskopiya, v.16, no.3, 1964, 484-490

TOPIC TAGS: optical constant, refraction index, absorption coefficient, liquid mercury, mercury, liquid gallium, gallium, Drude conduction theory, Zener theory, free electron, conduction electron

ABSTRACT: In addition to its intrinsic interest, investigation of the optical properties of metals can yield information that can be useful in theoretical interpretation of the microcharacteristics. This has been true of metals in the solid state, where the results of optical measurements have aided development of the theory of free electrons, energy band structure, etc. The situation is different where metals in the liquid state are concerned: thus, to date there is no satisfactory theory characterizing the behavior of conduction electrons in liquid metals. The available data are scanty; in fact, the data on the optical constants of mercury (the most

Card 1/2

ACCESSION NR: AP4020961

thoroughly investigated liquid metal) and gallium are conflicting: according to the data of L.G.Schulz (Adv.Phys.6,102,1957) the Drude conduction theory is valid for Hg and Ga in the entire range covered by Schulz's measurements, whereas according to J.N.Hodgson (Phil.Mag.4,183,1959; Ibid.5,272,1960; Ibid.6,509,1961; Ibid.8,229, 1963) deviations from the free electron theory obtain for almost all liquid metals in the long wavelength region. Accordingly, in the present work there were measured the optical constants - the index of refraction μ and absorption coefficient $\mu\chi$ - of mercury and gallium in the visible and near infrared regions by the earlier developed method of re-establishment of plane polarization (I.N.Shklyarevskiy and V. K.Miloslavskiy, Opt.i spektr.3,361,1957). The experimental results are tabulated and compared with the data of other authors (there is substantial disagreement and the reasons for this are discussed). The results are tentatively interpreted from the standpoint of the theory of free electrons (the Drude theory is only partially applicable). Orig.art.has: 9 formulas, 5 figures and 3 tables.

ASSOCIATION: none

SUBMITTED: 18Apr63 DATE ACQ: 02Apr64 ENCL: 00

SUB CODE: PH NR REF SOV: 005 OTHER: 011

Card 2/2

L 64503-65 EPF(c)/EWT(l)/EWT(m)/EWP(b)/EWP(t) IJP(c) GC/WW/JD/JG

ACCESSION NR: AP5012610 UR/0051/65/018/005/0832/0837 -32
535.321 + 535.241:546.57 05 B

AUTHORS: Yarovaya, R. G.; Shklyarevskiy, I. N. 44,55 44,55 21

TITLE: Investigation of the quantum absorption of light in silver 44,55

SOURCE: Optika i spektroskopiya, v. 18, no. 5, 1965, 832-837

TOPIC TAGS: light absorption, silver, optic constant, refractive index, optic transmission, optic transition, absorption edge

ABSTRACT: The purpose of the investigation was to determine the effect exerted on the optical properties of silver in the visible and ultraviolet regions by the presence of quantum-absorption bands. To this end, the authors measured the optical constants of silver layers deposited in vacuum. The measurements were made in the 0.267 -- 1.4 μ range. In the 1.4 -- 3.75 μ the obstacle constants were measured by the method of reconstructed linear polarization, described by one of the authors elsewhere (Shklyarevskiy, with V. K.

Card 1/3

L 64503-65

ACCESSION NR: AP5012610

Miroslavskiy, Opt. i spektr. v. 3, 361, 1957). At lower wavelengths the Avery method was used (D. J. Avery, Proc. Phys. Soc. v. B65, 425, 1952). The values obtained for the refractive index and for the absorption are compared with the results of others. The frequency dependence of the optical transmission near the edge of the quantum-absorption band is analyzed and certain conclusions are drawn with respect to the character of the observed interband transitions. The optical conductivity of the free electrons is calculated, and the difference between the experimental and calculated values of the optical conductivity of the film yields the contribution of the interband transitions. It is concluded that the observed quantum absorption in silver is connected with direct allowed transitions near that point in momentum space, where the energy distance between the corresponding bands has a minimum. The transitions at this point determine naturally the long wave edge of the absorption band. The plasma frequency of the electrons in the silver is calculated on the basis of the author's own measurements and those made by others, and is found to be very close to the experimentally observed value.

Card 2/3

L 64503-65
ACCESSION NR: AP5012610

(3)

5.44×10^{15} sec^{-1}. (The calculated value is 5.74×10^{15} sec^{-1}). The difference between these values is explained. 'The authors thank V. K. Miroslavskiy for a discussion of the work and valuable advice.' Orig. art. has: 3 figures and 3 formulas.

ASSOCIATION: None

SUBMITTED: 08Feb64 ENCL: 00 SUB CODE: OP

NR REF SOV: 007 OTHER: 010

Card 3/3

L 61502-65

ACCESSION NR: AP5012613 UR/0051/65/018/005/0853/0857 38 B
535.394

AUTHORS: Shklyarevskiy, I. N.; Kostyuk, V. P.; Lelyuk, L. G.; Yarovaya, R. G.

TITLE: On the magnitude and sign of the phase difference arising in the case of total internal reflection

SOURCE: Optika i spektroskopiya, v. 18, no. 5, 1965, 853-857

TOPIC TAGS: light reflection, phase shift, light polarization, optic constant, IR spectrum

ABSTRACT: This is a continuation of earlier work by one of the authors (Shklyarevskiy, Opt. i spektr. v. 14, 247, 1963 and earlier) devoted to the phase difference produced when light is reflected from a metallic surface. It is pointed out first that in the literature there is just as much disagreement concerning the sign and magnitude of the phase difference occurring in total internal reflection as in

Card 1/3

L 64502-65

ACCESSION NR: AP5012613

the case of ordinary reflection. To this end, the author first measured the phase difference using apparatus described elsewhere (Opt. i spektr. v. 9, 640, 1960). A method is proposed for reconstructing the linear polarization of the light reflected from a metallic surface by means of compensation via total internal reflection. This method makes it possible to measure the optical constants of metals over a wide range of the spectrum (including the infrared) in single reflection of light from a small sample. It is shown that the phase difference arising in total internal reflection is negative. A formula is given for this phase and a plot of its dependence on the angle of incidence. A method is proposed, based on this conclusion, for measurement of optical constants on the basis of the reconstruction of linear polarization, described by the authors elsewhere (Opt. i spektr. v. 3, 361, 1957). An advantage of the method over the Drude method is that the measurements are made at angles which are much smaller than the principal angles, making it possible to go into the infrared region. Orig. art. has: 3 figures and 8 formulas.

Card 2/3

L 64502-65
ACCESSION NR: AP5012613

ASSOCIATION: None

SUBMITTED: 02Apr64 ENCL: 00 SUB CODE: OP

NR REF SOV: 014 OTHER: 003

Card 3/3 KC

L 24268-66 EWT(1)/EWT(m)/EWP(t) IJP(c) JD/WW/JG/GG

ACC NR: AP6007017 SOURCE CODE: UR/0051/66/020/002/0355/0357

AUTHOR: Yarovaya, R. G.; Shklyarevskiy, I. N.

ORG: none

TITLE: Quantum absorption of light in copper

SOURCE: Optika i spektroskopiya, v. 20, no. 2, 1966, 355-357

TOPIC TAGS: light absorption, copper, absorption edge, absorption coefficient, refractive index, crystal defect, copper film

ABSTRACT: The quantum absorption of light in copper was investigated by a method used in an earlier paper (Opt. i spektr. v. 3, 361, 1957) to measure the index of refraction and the absorption coefficient of layers deposited in a vacuum (~10^{-5} mm Hg) in the spectral interval 0.45--2 μ, which includes the quantum absorption edge corresponding to the d-s electron transitions. Deviations from linearity of the refractive index and of the absorption coefficient were used as a measure of the quantum absorption. Two series of specimens were used, prepared at coating rates of ~100 Å/sec and several Å/sec. The results showed that the magnitude and position of the edge of the additional quantum absorption band depends strongly on the rate of deposition. The edge disappeared after annealing, thus indicating that the absorption band is connected with the structural defects of the metal. The results are discussed from the point of view of the band structure and are compared with those obtained for gold and silver. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 01Jun65/ ORIG REF: 006/ OTH REF: 002

Card 1/1 dda UDC: 535.34: 546.56

L 42896-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6018449 SOURCE CODE: UR/0051/66/020/006/1074/1076

67
61
B

AUTHOR: Shklyarevskiy, I. N.; Yarovaya, R. G.; Kostyuk, V. P.; Lelyuk, L. G.

ORG: none

TITLE: Effect of deposition rate and annealing on the optical contents of precious metals

SOURCE: Optika i spektroskopiya, v. 20, no. 6, 1966, 1074-1076

TOPIC TAGS: high purity metal, metal film, metal deposition, optic constant, metal crystallization, metal physical analysis, metal vapor deposition, refractive index, absorption coefficient

ABSTRACT: At a high evaporation rate, the metal atoms reaching the substrate have a large reserve of energy which is expended in their migration on the substrate and formation of crystals; the result is a coarse-grained polycrystalline layer. Conversely, at a low evaporation rate, the kinetic energy of the atoms is insufficient for migration, hence a large number of crystallization centers is generated, producing a layer with fine crystalline structure. For the spectral region where the light absorption depends on free electrons, the optical constants are related to the effective collision frequency of electrons with other electrons, phonons and structural defects. Since grain boundaries are the predominant structural defects in a finely dispersed

UDC: 535.321 + 535.341 : 553.41

Card 1/2

L 42896-66
ACC NR: AP6018449

6

metal layer, it is obvious that the effective electron-defect collision frequency is directly proportional to the size of the individual crystals. Consequently, the deposition rate is directly proportional to the absorption coefficient and inversely proportional to the refractive index. The authors measured optical constants for vacuum-deposited films of copper, silver and gold and found a good correspondence between measured and predicted values. Annealing of a slowly deposited metal film changes its optical properties to nearly the same values as for rapidly deposited film of the same metal. There was practically no measurable change due to annealing of rapidly deposited films. Reported discrepancies in measurement results of optical properties of metals maybe attributed to the differences in deposition rates and the lack of subsequent normalizing annealing. The authors conclude that refractive indices and absorption coefficients in metal films are functions of deposition rate and subsequent annealing. The authors thank M. M. Noskov who called their attention to the part played by the annealing of the specimens. Orig. art. has: 4 figures, 2 formulas.

SUB CODE: 11,20/ SUBM DATE: 15Apr65/ ORIG REF: 004/ OTH REF: 002

Card 2/2

L 04824-67 EWT(l)/EWT(m)/EWP(t)/ETI IJP(c) GG/WW/JD/JG

ACC NR: AP6026973 SOURCE CODE: UR/0051/66/021/002/0197/0203

AUTHOR: Shklyarevskiy, I. N.; Yarovaya, R. G.

40
B

ORG: none

TITLE: Quantum absorption of light in gold

SOURCE: Optika i spektroskopiya, v. 21, no. 2, 1966, 197-203

TOPIC TAGS: gold, light absorption, metal film, OPTIC CONSTANT

ABSTRACT: The optical constants of gold layers (refractive index μ and absorption $\mu\chi$) in the region of the edge of the d-s band of quantum absorption (0.36-2.5 μ) were measured. The layers were deposited in a vacuum of about 5×10^{-5} mm Hg at rates ranging from 1 to 100 Å/sec. From the frequency dependence of $\mu \cdot \mu\chi$ it was found that the corresponding interband transitions are direct and allowed, and begin at an energy of 2.4 eV. A study of the effect of deposition rate followed by low-temperature annealing on the optical constants showed that additional, structure-sensitive bands of quantum absorption may arise in gold. The nature of these bands is discussed, and a new explanation is offered for the inconsistency existing in the literature on the subject of the concentration of conduction electrons in gold. Authors are grateful to V. K. Miloslavskiy for useful suggestions and discussion. Orig. art. has: 3 figures and 2 formulas.

SUB CODE: 20/ SUBM DATE: 22Apr65/ ORIG REF: 009/ OTH REF: 011

UDC: 535.34:546.59

Card 1/1 gp

MIKHAYLENKO, N.P., inzh.; YAROVAYA, R.L., inzh.

Experience of the Poltava Oils and Fats Combine Masl.-zhir. prom. 26 no.2:37-39 F '60. (MIRA 13:5)

1. Poltavskiy maslozhirovoy kombinat.
(Poltava--Oil industries)

L 31215-66 EWT(m) RM

ACC NR: AP6022791 SOURCE CODE: UR/0079/66/036/002/0229/0232

AUTHOR: Kudryashov, L. I.; Bortsova, E. I.; Yarovaya, S. K.; Kochetkov, N. K. 61 B

ORG: none

TITLE: Radiation chemistry of carbohydrates. V. Formation of acid products in the radiolysis of aqueous solutions of lactose, cellobiose, and maltose

SOURCE: Zhurnal obshchey khimii, v. 36, no. 2, 1966, 229-232

TOPIC TAGS: radiation chemistry, carbohydrate, chemical decomposition, aqueous solution, isotope, gamma radiation, gamma ray absorption, hydrogen peroxide

ABSTRACT: It was found that under the action of the gamma radiation of Co^{60} on aqueous solutions of lactose, cellobiose, and maltose in the absence of oxygen, radiation hydrolysis of these carbohydrates to the corresponding monosaccharides is not accompanied by the formation of acid products. The acids formed in radiolysis are secondary products. The process of radiolysis of disaccharides in aqueous solutions in the absence of oxygen may be broken down into two steps. In the first step, below $1.4 \cdot 10^{19}$ eV/ml, no formation of acids is observed. At a higher dose, acids are formed in proportion to the absorbed radiation. Below the indicated dose limit, radiolysis occurs chiefly under the action of H and OH radicals, with the main radiation hydrolysis of the disaccharide; at higher doses the hydrogen peroxide concentration becomes appreciable, which reacts with the H and OH radicals to form the peroxide radical. This undergoes secondary reactions to form acids. Orig. art. has: 4 figures and 2 tables. [JPRS]

SUB CODE: 07, 18 / SUBM DATE: 25Nov64 / ORIG REF: 002 / OTH REF: 005

UDC: 574.454

Card 1/1 BLG

0915 0769

KOCHETKOV, N.K.; KUDRYASHOV, L.I.; YAROVAYA, S.M.; BORTSOVA, E.I.

Radiochemistry of carbohydrates. Part 4: Radiolysis of aqueous lactose and cellobiose solutions. Zhur. ob. khim. 35 no.7: 1191-1194 Jl '65. (MIRA 18:8)

1. Institut prirodnykh soyedineniy AN SSSR.

TSELLE, M.A.; YAROVAYA, V.A.

Harmfulness of the fungus Thelephlra terrestris Fr.causing "strangling" of seedlings. Nauch.Trudy Inst.ent.i fit. 6: 138-143 '55. (MIRA 9:7)
(Seedlings) (Fungi)

YAROVAYA, V. M.

YAROVAYA, V. M. and MISEVICH, A. A. "Rosette-like Disease of Winter Wheat," Sovetskaia Agronomiia, vol. 4, no. 10, 1946, pp. 95-96 20 So84

So: Sira-Si-90-53, 15 Dec. 1953

YAROVENKO, A. N.

"Attempt at New Analytical Classification of Cations." Thesis for degree of Cand. Chemical Sci. Sub 26 Apr 50, Moscow Order of Lenin Chemicotechnological Inst. imeni D. I. Mendeleyev

[redacted] Summary 71, 4 Sep 52, Dissertations Presented for Degrees in Science and Engineering in Moscow in 1950. From Vechernyaya Moskva, Jan-Dec 1950.

YAROVENKO, A.N.

Detection of cadmium ions in the presence of copper ions. ... Khim.-Tekhnol. Inst. ... the ...

3

... Cd/ml

5(2), 5(3) SOV/64-59-5-27/28

AUTHORS: Kreshkov, A. P., Doctor of Chemical Sciences, Bork, V. A., Candidate of Chemical Sciences, Yarovenko, A.N. Candidate of Chemical Sciences

TITLE: Theoretical Principles and Calculations in Analytical Chemistry, 2nd Modified and Completed Edition (Approved by the Glavnoye upravleniye tekhnologicheskikh vysshikh uchebnykh zavedeniy MVO SSSR (Main Administration of Technological Colleges MVO USSR)) as a Textbook for Chemical-technological Vuzes and Departments, Soviet Science, M., 1956, 447 Pages, 9 Rubles 25 Copecks

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 5, pp 460 - 461 (USSR)

ABSTRACT: The above book is reviewed and judged negative. The book contains a considerable amount of mistakes, inexact formulations and wrong determinations, possibly due to carelessness or insufficient knowledge of the author. The manuscript of the book was not revised and corrected with the necessary accuracy by the editors. A number of incorrect passages and inadequate explanations are pointed out.

Card 1/1

KRESHKOV, Anatoliy Pavlovich. Prinyali uchastiye: VIL'BERG, S.S., dotsent, kand. khim. nauk; MIKHAYLENKO, Yu.Ya., dotsent, kand. khim. nauk; YAROVENKO, A.N., dotsent, kand. khim. nauk; STUPNIKOVA, N.I., red.; SHPAK, Ye.G., tekhn. red.

[Principles of analytical chemistry; qualitative and quantitative analysis] Osnovy analiticheskoi khimii; kachestvennyi i kolichestvennyi analiz. Moskva, Gos. nauchno-tekhn. izd-vo khim. lit-ry. Book 2. [Quantitative analysis] Kolichestvennyi analiz. 1961. 552 p. (MIRA 14:10)

(Chemistry, Analytical--Quantitative)

KRESHKOV, Anatoliy Pavlovich. Prinimali uchastiye: VIL'BORG, S.S., dots., kand. khim. nauk; MIKHAYLENKO, Yu.Ya., dots., kand. khim. nauk; YAROVENKO, A.N., dots., kand. khim. nauk; STUPNIKOVA, N.I., red.; SHPAK, Ye.G., tekhn. red.

[Principles of analytical chemistry; qualitative and quantitative analysis] Osnovy analiticheskoi khimii; kachestvennyi i kolichestvennyi analiz. Moskva, Gos. nauchno-tekhn. izd-vo khim. lit-ry. Book 1. [Theoretical principles. Qualitative analysis] Teoreticheskie osnovy, kachestvennyi analiz, 1961. 635 p. (MIRA 14:9)
(Chemistry, Analytical--Qualitative)

KRESHKOV, A.P.; YAROVENKO, A.N.; ZEL'MANOVA, I.Ya.

Quantitative determination of salts and their mixtures with acids and bases by potentiometric titration in a methyl ethyl ketone medium. Dokl. AN SSSR 143 no.2:348-350 Mr '62. (MIRA 15:3)

1. Predstavleno akademikom I.V. Tananayevym.
(Salts)
(Potentiometric analysis)

KRESHKOV, A.P.; YAROVENKO, A.N.; ZEL'MANOVA, I.Ya.

Analysis of mixes of salts and acids by the potentiometric method in nonaqueous solutions. Zav.lab. 29 no.3:295-298 '63. (MIRA 16:2)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

(Acids, Organic)
(Potentiometric analysis)
(Salts)

KRESHKOV, A.P.; YAROVENKO, A.N.; ZEL'MANOVA, I.Ya.

Analysis of salts in nonaqueous solutions. Zhur.anal.khim. 17 no.7:781-784 O '62. (MIRA 15:12)

1. Mendeleev Moscow Chemico-tekhnological Institute.
(Salts)

KRESHKOV, A.P.; YAROVENKO, A.N.; ZEL'MANOVA, I.Ya.

Differential titration of salts in nonaqueous solutions. Izv.-vys.ucheb.zav.;khim.i khim.tekh. 6 no.1:15-23 '63. (MIRA 16:6)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I.Mendeleyeva, kafedra analiticheskoy khimii.
(Salts) (Titration)

KRESHKOV, A.P.; YAPOVENKO, A.N.; NEVSKAYA, V.N.

Determination of ammonium ions in individual salts, in their mixtures with acids or ammonia, and in mineral fertilizers. Zhur. anal. khim. 19 no.6:725-730 '64. (MIRA 18:3)

1. Moskovskiy khimiko-tekhnilogicheskiy institut imeni Mendeleyeva.

KRESHKOV, Anatoliy Pavlovich. Prinimali uchastiye: YAROVENKO, A.N., dots.; KRESHKOVA, Ye.K., st. prepod.; VIL'BORG, S.S., kand. khim. nauk, dots.; MIKHAYLENKO, Yu.Ya.; STUPNIKOVA, N.I., red.; ODERBERG, L.N., red.

[Principles of analytical chemistry; qualitative and quantitative analysis in two books] Osnovy analiticheskoi khimii; kachestvennyi i kolichestvennyi analiz [v dvukh knigakh]. Izd.2., perer. Moskva, Khimiia. 2 vol.
(MIRA 18:12)

KRESHKOV, A.P.; YAROVENKO, A.N.; NEVSKAYA, V.N.

Titration of certain salts by the displacement method with tetraethyl ammonium hydroxide. Zav.lab. 31 no.3[illegible]

1. Moskovskiy khimiko-tekhnologicheskiy institut im. D.I. Mendeleyeva.

L 34613-66 EWT(m) DS/RM

ACC NR: AP6026579 SOURCE CODE: UR/0191/66/000/002/0057/0059

33
B

AUTHOR: Kreshkov, A. P.; Yarovenko, A. N.; Zelenina, L. N.

ORG: none

TITLE: Swelling and absorption capacity of ion-exchange resins in nonaqueous media

SOURCE: Plasticheskiye massy, no. 2, 1966, 57-59

TOPIC TAGS: nonaqueous solution, ion exchange resin, methanol, acetone, temperature dependence, cation, anion exchange resin, titrimetry

ABSTRACT: The swelling and exchange capacity of ion-exchange resins (the strongly acidic cation-exchange resin SDV-3 in the H-form and the strongly basic anion-exchange resin AV-17 in the Cl-form) were studied in nonaqueous solvents at various temperatures. The temperature dependence of the swelling of the ion-exchange resins in methanol medium was characterized by a convex curve with a maximum corresponding to 16°C; it depended on many factors, including the individual properties of the resin and solvent. The process of swelling was accompanied by diffusion and adsorption of the solvent, which are influenced oppositely by temperature. The swelling behavior was also studied in acetone. The absorption capacity of the ion-exchange resins was determined under dynamic conditions, retaining a constant rate of flow in the column, uniformly filled with the ion-exchange resin. The temperature dependence of the absorption capacities of the cation and anion-exchange resins

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Card 1/2

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ACC NR: AP6026579

was found to differ; there was also a difference in the dependence of their capacities on the swelling. It was hypothesized that in the case of cation exchange the absorbed solvent in the pores of the swollen ion-exchange resin interferes with the penetration of cations to the active groups, the dynamic exchange capacity therefore increasing with increasing temperature and the swelling decreasing. In the case of anion exchange the molecules of adsorbed solvent promote an increase in the rate of exchange. The exchange capacity of the anion-exchange resin and its swelling reach a maximum at 20°C. The behavior of the cation-exchange resin in nonaqueous media was also studied by potentiometric titration, in which the cation-exchange resin was found to behave as a strong acid, with an exchange capacity of three milligram equivalents per gram. Orig. art. has: 5 figures and 1 table. [JPRS: 36,455]

SUB CODE: 07 / SUBM DATE: none / ORIG REF: 006 / OTH REF: 006

Card 2/2

L 40968-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6024289 SOURCE CODE: UR/0075/66/021/007/0813/0816

AUTHOR: Kreshkov, A. P.; Yarovenko, A. N.; Milayev, S. M. 32 B

ORG: Moscow Chemical Engineering Institute im. D. I. Mendeleyev (Moskovskiy khimiko-tekhnologicheskiy institut)

TITLE: Analysis of magnesium-rare earth element alloys in nonaqueous solutions

SOURCE: Zhurnal analiticheskoy khimii, v. 21, no. 7, 1966, 813-816

TOPIC TAGS: magnesium alloy, rare earth element, nonaqueous solution, titrimetry, BROMIDE

ABSTRACT: The behavior of chlorides, bromides, and nitrates of Sc, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Yb, Dy, Ho, Er, Tm, and Lu in nonaqueous solvents was studied, and it was found that bromides in mixed methanol-acetone solvent can be determined separately by direct potentiometric titration with a standard benzene-methanol solution of tetraethylammonium hydroxide. On the basis of earlier determined properties of mineral acids and their salts in nonaqueous solutions, new and rapid methods have been developed for analyzing binary and ternary Mg, Mn, Cd, Co, Ni, Zn, Al, Pb, and other metal base alloys with rare earths. A procedure for analyzing magnesium alloys with the rare earths enumerated above is described. It consists of a consecutive potentiometric titration of rare earth and magnesium bromides in a 1:4 methanol-acetone solvent. It is rapid and reasonably accurate and can be applied to the analysis of certain ternary magnesium alloys. Orig. art. has: 2 figures and 2 tables. [27]

SUB CODE: 07/ SUBM DATE: 23Jul65/ ORIG REF: 007/ OTH REF: 001/ ATD PRESS: 5055

Card 1/1 UDC: 543.70

KRESHKOV, A.P.; YAROVENKO, A.N.; ZELENINA, L.N.

Swelling and absorption properties of ion exchangers in nonaqueous solutions. Plast. massy no.2:57-59 '66.
(MIRA 19:2)

L 36079-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6016298 (A) SOURCE CODE: UR/0075/66/021/001/0034/0039

AUTHOR: Kreshkov, A. P.; Yarovenko, A. N.; Milayev, S. M.; Aldarova, N. Sh.

ORG: Moscow Chemico-technological Institute im. D. I. Mendeleyev (Moscovskiy khimiko-tekhnologicheskiy institut); Eastern Siberian Technological Institute, Ulan-Ude (Vostochno-Sibirskiy tekhnologicheskiy institut)

TITLE: Analysis for salts of rare earth elements in nonaqueous solutions

SOURCE: Zhurnal analiticheskoy khimii, v. 21, no. 1, 1966, 34-39

TOPIC TAGS: quantitative analysis, rare earth element, nonaqueous solution

ABSTRACT: The article describes the results of a study of the behavior of the rare earth elements in alcohols, ketones, and in a mixture of methanol and acetone. Nitrates of the rare earth elements in a methanol-acetone medium (1:4) act as acids and can therefore be determined by direct potentiometric titration with a standard benzene-methanol solution of tetraethylammonium hydroxide or with a methanol solution of tetramethylammonium hydroxide. The following rare earths

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Card 1/2

L 36079-66

ACC NR: AP6016298

were determined: Y, La, Ce(III), Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Yb, Lu, and Th. A figure gives the titration curves for individual rare earth nitrates, and a second figure gives the titration curves for mixtures of rare earth nitrates and for mixtures of nitrates with nitric acid. Further figures give analogous curves for the the nitrates of various elements and for mixtures of rare earth nitrates with the nitrates of other elements. The actual analytical results of the determinations are shown in tabular form. Orig. art. has: 4 figures and 3 tables.

SUB CODE: 07/ SUBM DATE: 06May65/ ORIG REF: 004/ OTH REF: 013

LS

Card 2/2

KFESHKOV, A.P.; YAROVENKO, A.N.; SAYUSHKINA, Ye.N.; ZELENINA, L.N.

Using the method of differential titration in nonaqueous solutions for the determination of salts. Izv.vys.ucheb.zav.; khim. i khim. tekh. 8 no.2:196-202 '65. (MIRA 18:8)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva, kafedra analiticheskoy khimii.

L 36925-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6012212 SOURCE CODE: UR/0032/66/032/004/0396/0397

AUTHOR: Kreshkov, A. P.; Yarovenko, A. N.; Milayev, S. M.

ORG: Moscow Chemico-technological Institute im. D. I. Mendeleyev (Moskovskiy khimiko-tekhnologicheskiy institut)

TITLE: Analysis of alloys of the rare earth elements in nonaqueous solutions

SOURCE: Zavodskaya laboratoriya, v. 32, no. 4, 1966, 396-397

TOPIC TAGS: quantitative analysis, rare earth element, nonaqueous solution

ABSTRACT: The article reports a fast approximate method of analysis of alloys of the rare earth elements, based on dissolving them in hydrobromic acid and subsequent titration of the compounds obtained in a methanol-acetone medium, with a standard benzene-methanol solution of tetraethylammonium hydroxide. The method has been applied to the analysis of binary and ternary alloys of the rare earth metals based on magnesium, manganese, cadmium, cobalt, nickel, zinc, aluminum, lead, and other metals. The titration was carried out by the potentiometric method. Measurement of the potentials was done with a type LP-58

UDC: 543.7

Card 1/2

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ACC NR: AP6012212

potentionmeter. Experimental results are given in two tables. Orig. art. has: 2 figures and 2 tables.

SUB CODE: 07/ SUBM DATE: none.

Card 2/2

EFENDIYEV, M.E., prof., zasluzhennyy deyatel' nauki; YAROVENKO, G.A.; SIDEL'NIKOVA, T.Ya.

Reviews and bibliography. Azerb. med. zhur. 41 no.11:86-89 N '64. (MIRA 18:12)

YAROVENKO, G[I.]

The types of nitrogen fertilizers for cotton plants. P. Protasov and G. Yarovenko. *Khlopkovodstvo* 5, No. 8, 51-4 (1955). — The [illegible] type of [illegible] fer[illegible] [illegible] be [illegible] dynamics [illegible] [illegible] sions were arrived at from data on the measurements of the movement of the [illegible] through [illegible] dressing, the [illegible] of cotton by adding [illegible] and NH_4NO_3 [illegible] [illegible]

2