"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

ACCESSION NR: AP3004217

81

AUTHOR: Kharlamov, P. V. (Novosibirsk)

[illegible] equations of motion of a heavy hard body with a stationary point

[illegible] fixed point, [illegible]

[illegible] equations of motion [illegible] when the independent variable is absent, from sixth to second. The [illegible] lowering has been [illegible]

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DATE ACQ: 25 AUG 63

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ENCL: 00

OTHER: 003

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L 12898-63 EWP(r)/EPA(b)/EWT(d)/EWT(m)/FCC(w)/BDS AFFTC/ASD/
ACCESSION NR AP3001392 S/0020/63/150/004/0759/0760

63

AUTHOR: Kharlamov, P. V.

TITLE: A case of integrability of equations of motion of a heavy solid body containing liquid filled cavities

SOURCE: AN SSSR. Doklady, v. 150, no. 4, 1963, 759-760

TOPIC TAGS: equations of motion, liquid filled cavities, elliptical integral

ABSTRACT: A solid body with a fixed point and cavities (some multiply connected) filled with ideal liquid was studied. In a general case, the center of gravity of such a system does not coincide with the support point. A known case of integrability of a body without liquid filled cavities developed by Bobylev-Steklov was used in order to find the elliptical integral of motion. Orig. art. has: 9 equations.

ASSOCIATION: Institut gidrodinamiki Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Hydrodynamics of the Siberian Division of the Academy of Sciences, SSSR)

Card 1/2

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARIAMOV, P. V. (Novosibirsk)

"On the solutions of equations of solid dynamics".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

L 65089-65

SOURCE: Ref. zh. Mekhanika, Abs. 2A59

TITLE: Equations for the motion of a gyrostat

gyrostat motion calculation

TRANSLATION: Results previously obtained

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, P.V. (Novosibirsk)

One solution to the problem of the motion of a body having a fixed point. Prikl. mat. i mekh. 28 no.1:158-159 Ja-F'64. (MIRA 17:2)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, P.V. (Novosibirsk)

Kinematic interpretation of the motion of a body with one fixed point. Prikl. mat. i mekh. 28 no.3:502-507 My-Je'64 (MIRA 17:8)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, P.V.

Two particular solutions of the problem of the motion of a body having a single fixed point. Dokl. AN SSSR 154 no.2:287-289 Ja'64. (MIRA 17:2)

1. Institut gidromekhaniki Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom P.Ya. Kochinoy.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, P.V.

Kinematic interpretation of a solution to a problem concerning the motion of a body with one fixed point. Dokl. AN SSSR 158 no.5:1048-1050 O '64. (MIRA 17:10)

1. Institut gidrodinamiki Sibirskogo otdeleniya AN SSSR. Predstavlenc akademikom F.Ya.Kochinoy.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

NOVOSIBIRSK

...ungen der Bewegung eines schweren ... einen festen Punkt. Math. Ann. 1908, Vol 65). The third solution coincides with the solution obtained earlier by D. N. Goryachev (Tr. Otd. fiz. nauk Obsva lyub. vestestv., 1899,

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that is based upon the equation of an

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

ACCESSION NR: AP5014940 UR/0040/65/029/003/0567/0572

AUTHOR: Kharlamov, P. V. (Novosibirsk)

... solutions of equations for the dynamics of a solid body

SOURCE: Prikladnaya matematika i mekhanika, v. 29, no. 3, 1965, 567-572

TOPIC TAGS: line integral, solid body, Newt...

$$\frac{dR_s}{dt} = R_s \frac{\partial T}{\partial P_s} - R_s \frac{\partial T}{\partial R_s} \quad (133)$$

... inertial motion ...

... such as the problem of the motion of a solid in a central Newtonian force field, and others. The author ...

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[illegible] of Chaplygin. In both examples the solution consists of [illegible]

[illegible] ENCL: 00 SUB CODE: ME

NO REF SOV: 007 OTHER: 000

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, S.A. (Moskva)

Rigidity of a radial thrust ball bearing with an axial tension.
Izv.AN SSSR.Otd.tekh.nauk.Mekh.i mashinostr. no.5:139-141 S-O '62.
(MIRA 15:10)

(Ball bearings)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, S.A.

Reciprocation of Routh's theorem. Vest. Mosk. un. Ser.1 : mat., mekh.16 no.6:62-66 N-D '61. (MIRA 14:11)

1. Kafedra prikladnoy mekhaniki Moskovskogo universiteta.
(Mechanics, Analytic)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

13.2520

S/020/61/139/002/007/017
B104/B205

AUTHOR: Kharlamov, S. A.

TITLE: Movement of a gyroscope suspended on gimbals in the presence of a moment about its axis of autorotation

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 139, no. 2, 1961, 327-330

TEXT: The equation of motion for the system shown in Fig. 1 reads $\sum_{j=1} \left\{ \frac{d}{dt} \left(\frac{dT}{d\dot{q}_i} \right) - \frac{dT}{dq_i} - Q_i \right\} \delta q_i = 0$. The kinetic energy of the system is given by

$$2T = [A_2 + (A + A_1)\cos^2\beta + C_1 \sin^2\beta]\dot{\alpha}^2 + (A + B_1)\dot{\beta}^2 + C(\dot{\gamma} + \dot{\alpha}\sin\beta)^2, \quad (1)$$

where A and C are the equatorial and the polar moment of inertia, respectively, of the rotor; A_1, B_1, and C_1 are the moments of inertia of the inner frame of the gyroscope relative to the x_1, y_1, and z_1 axes; and A_2 is the moment of inertia of the outer frame of the gyroscope relative to its axis

Card 1/7

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

of rotation. The system

$$
\begin{gathered}
[A_2 + (A + A_1)\cos^2\beta + (C + C_1)\sin^2\beta]\ddot{\alpha} - \\
-2(A + A_1 - C - C_1)\dot{\alpha}\dot{\beta}\cos\beta\sin\beta + \\
+ H\dot{\beta}\cos\beta + C\left(\frac{ds}{dt}\sin\beta + s\dot{\beta}\cos\beta\right) = 0, \qquad (2) \\
(A + B_1)\ddot{\beta} + (A + A_1 - C - C_1)\dot{\alpha}^2\sin\beta\cos\beta - H\dot{\alpha}\cos\beta - Cs\dot{\alpha}\cos\beta = 0, \\
C\frac{d}{dt}(s + \dot{\alpha}\sin\beta) + \lambda s = 0,
\end{gathered}
$$

где $H = C\omega_0$, $\lambda = -\left.\frac{\partial Q_\gamma}{\partial s}\right|_{s=0}$.

is set up for the equation of motion. Here, ω_0 is the angular velocity of the rotor at which the torque and the moment of resistance as functions of the number of revolutions are equally large; $H = C\omega_0$, $\lambda = -\partial Q_\gamma/\partial s|_{s=0}$. Q_γ is the sum of moment of resistance plus torque; $s = \dot{\gamma} - \omega_0$. The first integral of this equation of motion reads

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

$\left\{A_2 + (A + A_1)\cos^2\beta + (C + C_1)\sin\beta\right\}\dot{\alpha} + (H + Cs)\sin\beta = k$. Next, the author contemplates the particular solution to the equation of motion, which corresponds to a steady rotation of the rotor about its axis with the angular velocity ω_0. In order to investigate the stability of this motion, the author studies the perturbed motion of this system and shows that, in accordance with a theorem of Lyapunov, the unperturbed motion is asymptotically stable with respect to ξ, $\dot{\eta}$, and ζ. As is known, the nutation of a free gyroscope causes it to deviate systematically. In the presence of torque, however, the movement becomes asymptotically stable with respect to $\dot{\alpha}$. This indicates that a gyroscope deviates under the influence of nutation. To determine this deviation, the equations of motion are solved under the initial conditions, $\alpha = \alpha_0$, $\dot{\alpha} = \Omega$, $\beta = \beta_0$, $\beta = 0$, $s = 0$. The solutions α, β, and s are sought as power series of Ω^2. The first approximation reads

$$\begin{gathered}[A_2 + (A + A_1)\cos^2\beta_0 + (C + C_1)\sin^2\beta_0]\ddot{\alpha}_1 + H\cos\beta_0\dot{\beta}_1 + C\sin\beta_0\dot{s}_1 = 0,\\ (A + B_1)\ddot{\beta}_1 - H\cos\beta_0\dot{\alpha}_1 = 0, \qquad (3)\\ T(\dot{s}_1 + \ddot{\alpha}_1\sin\beta_0) + s_1 = 0.\end{gathered}$$

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25777

which is solved under the initial conditions $\dot{\alpha}_1 = 1$, $\beta_1 = 0$, $\dot{\beta}_1 = 0$, $s_1 = 0$. The solutions are

$$\dot{\alpha}_1 = e^{-nt}\cos\omega t, \quad \beta_1 = \frac{H\cos\beta_0}{(A+B_1)\omega^2}e^{-nt}(1-\cos\omega t), \qquad (4)$$
$$s_1 = -\sin\beta_0\left[\frac{k^2}{1+k^2}e^{-nt}\cos\omega t - \frac{k}{1+k^2}e^{-nt}\sin\omega t\right].$$

where the damping n and the frequency ω of vibration are given by

$$n = \frac{k^2}{1+k^2}\frac{C\sin^2\beta_0}{2I_0T}, \quad \omega = \frac{H\cos\beta_0}{\sqrt{(A+B_1)I_0'}}, \qquad (5)$$

where

$$I_0 = A_2 + (A + A_1)\cos^2\beta_0 + C_1\sin^2\beta_0,$$
$$I_0' = A_2 + (A + A_1)\cos^2\beta_0 + \left(C_1 + \frac{C}{1+k^2}\right)\sin^2\beta_0.$$

These results are substituted in the second approximation:

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$$
\begin{aligned}
&\{A_2 + (A + A_1)\cos^2\beta_0 + (C + C_1)\sin^2\beta_0\}\ddot{\alpha}_2 + H\cos\beta_0\dot{\beta}_2 + C\sin\beta_0\dot{s}_2 = \\
&= 2(A + A_1 - C - C_1)\cos\beta_0\sin\beta_0(\dot{\alpha}_1\dot{\beta}_1 + \ddot{\alpha}_1\beta_1) + \\
&+ H\dot{\beta}_1\beta_1\sin\beta_0 - C\frac{d}{dt}(\dot{s}_1\beta_1)\cos\beta_0, \\
&(A + B_1)\ddot{\beta}_2 - H\cos\beta_0\dot{\alpha}_2 = -(A + A_1 - C - C_1)\dot{\alpha}^2\cos\beta_0\sin\beta_0 - \\
&H\dot{\alpha}_1\beta_1\cos\beta_0 + Cs_1\dot{\alpha}_1\cos\beta_0, \\
&T(\dot{s}_2 + \ddot{\alpha}_2\sin\beta_0) + s_2 = -T\cos\beta_0\frac{d}{dt}(\dot{\alpha}_1\beta_1)
\end{aligned}
\tag{6}
$$

From this, the following expression is obtained for the limiting angle of the deviation of the gyro's body axis under the influence of nutation:

$$
\alpha(t) \underset{t\to\infty}{\to} \frac{\sin\beta_0}{2H\cos^2\beta_0}\left(A_2 + C_1 + \frac{C}{1+k^2}\right)\frac{\Omega^2}{2n}. \tag{7}
$$

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Movement of a gyroscope suspended ...

S/020/61/139/002/007/017
B104/B205

A. Yu. Ishlinskiy (Mekhanika spetsial'nykh giroskopicheskikh sistem (Mechanics of special gyroscopic systems), Kiyev, 1952) is mentioned. There are 2 figures and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc.

PRESENTED: January 6, 1961, by A. Yu. Ishlinskiy, Academician

SUBMITTED: January 5, 1961

Card 6/7

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

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37141

26.2123
26.2182

S/179/62/000/001/010/027
E114/E181

AUTHOR: Kharlamov, S.A. (Moscow)

TITLE: Particular solutions for Reynolds' equation of the hydrodynamic behaviour of lubricant in ball bearings

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, no.1, 1962, 77-82

TEXT: To explain the mechanism of the creation of an oil film in a combined journal and thrust ball bearing and to determine the forces exerted by the fluid film in the area of contact it is assumed that the balls and the race rings are geometrically ideal and absolutely inelastic. An equation is derived for the thickness of the oil film. Hydrodynamic equations are derived from the Navier-Stokes equations by assuming that inertia forces are negligibly small in comparison with viscous friction, that the main component of the viscous friction is proportional to the square of the distance along the normal to the surface, and that the pressure in the oil film is constant throughout its thickness.

Card 1/3

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

Particular solutions for Reynolds' ... S/179/62/000/001/010/027
E114/E181

If the pressure distribution function is known, it is now possible to determine velocities and calculate forces acting on the ball due to the oil film. General equations for the force and couple acting on the ball are determined and can be solved if the pressure distribution function is known. It is proved that pure rolling is not possible in a ball bearing and a case is considered of combined rolling and sliding. The sliding velocity is found to be a direct function of the oil film thickness. The equation for the force due to the spinning of the ball with respect to one of the race rings - which always occurs in the case of combined journal and thrust bearings - is found to be in the form of a divergent integral, as in the case of combined sliding and rolling. That is, frictional forces due to spinning will significantly depend on the thickness of the oil film. The frictional couple due to spinning is found to be proportional to the 4/3 power of the bearing load, which is in good agreement with experimental data of G.S. Reichenback (Ref.3: The importance of spinning friction in thrust-carrying ball bearings, Trans. ASME Ser. D., J. Basic Engineering, 82, no.2, 1960, 295-301).

Card 2/3

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

Particular solutions for Reynolds'.. S/179/62/000/001/010/027
E114/E181

Forces tending to bring the ball into a direct contact with the race ring in a static bearing reduce the separating film of oil along an exponential time curve. By neglecting the assumption that the ball and the race rings are completely inelastic, a formula is derived for the starting torque of the combined journal and thrust ball bearing as a function of the journal loading. An attempt is made to generalise the equation to allow for viscosity which is not constant but varies with pressure. There are 3 figures.

SUBMITTED: October 3, 1961

Card 3/3

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

36045

13.2500

S/040/62/026/002/019/025
D299/D301

AUTHOR: Kharlamov, S.A. (Moscow)

TITLE: On the motion of a gyroscope, mounted on ball bearings in a Cardan suspension

PERIODICAL: Prikladnaya matematika i mekhanika, v. 26, no. 2, 1962, 3 5 - 369

TEXT: In the theory of free gyroscope-motion, it is assumed that the position of the momentary axis of rotation with respect to the internal gimbal-rings, is fixed in a coordinate system, connected to the ring. In the present article, this assumption is not made. The relative motion of the gyroscope is determined purely kinematically, by giving the law of motion of its center of inertia and the orientation of its figure of rotation. The inertia forces of the relative motion produce small oscillations of the gyroscope about its stationary motion, forcing the gyroscope to precess about the axis of the external ring. First, the equation of the hyperboloid of rotation, described by the axis of the figure, is derived. Then the equations of motion of the gyroscope are set up by the method of

Card 1/3

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Lagrange. If the Euler angle θ_0 between the z- and ζ-axes is zero, then the equations of motion allow a particular solution which corresponds to stationary motion with respect to the support. The momentary axis of rotation is shifted, describing a cylindrical surface, whose axis coincides with the z-axis. The terms in which $\theta_0 \neq \neq 0$, are considered as small perturbations. Thereupon the solutions of the equations of motion are

$$\alpha = \alpha_0 + ut + \xi(t), \ \beta = \beta_0 + \eta(t), \ \Psi = \lambda t + \Psi_0 + \zeta(t),$$

where u is the constant rate of precession. These expressions lead to a system of nonhomogeneous linear differential equations of motion. After integrating this system, it is possible to find the precession rate by the method of Magnus. The obtained result points to the need for making the z-axis coincide exactly with the principal axis of inertia of the internal ring. Further, it is shown that a displacement h of the center of inertia of the gyroscope, leads to additional reactions in the resistances of the axes. The generalized reaction forces were determined A.I. Lur'ye's method. Further the displacement of the gyroscope figure under the rotation of the

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ball bearings, is analyzed. The obtained formulas for the rate of deflection of the gyroscope under mutational oscillations show that the motion of a gyroscope on ball bearings, in the presence of a shift in the axis (with respect to the axis of symmetry of the external rings), is analogous to the motion of a dynamically unbalanced gyroscope, whose polar moment of inertia is k times larger, the angle between the axis of dynamical symmetry and the axis of proper rotation being equal to θ_0, and the velocity of rotation - k times smaller. In the above analysis it was assumed that the cages of the ball bearings are rotating synchronously; in practice, however, this condition is not rigorously fulfilled. Hence more accurate investigations are still required. There are 2 figures and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc (including 1 translation). The reference to the English-language publication reads as follows: T. Yamamoto. On critical speeds of a shaft supported by a ball bearing, J. Appl. Mech., 1959, 26, no. 2, 199-204.

SUBMITTED: July 10, 1961

Card 3/3

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

34822

S/020/62/142/005/011/022
B104/B102

13.2520

AUTHOR: Kharlamov, S. A.

TITLE: Effect of elasticity of the axle bearing of the outer gimbal of a cardanic suspension on nutational oscillations and on the gyroscopic deviation

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 142, no. 5, 1962, 1054-1057

TEXT: Ye. L. Nikolai's equation of motion of a gyroscope (Tr. po mekhanike, M., 1955) is applied to study the reaction of the axle bearings of a cardanic suspension. Two coordinate systems fixed with respect to the outer and inner gimbals are introduced, and the moments of reaction of the bearings are determined from Euler's equations for the outer and inner gimbals and the gyroscope (A. I. Lur'ye, Prikl. matem. i mekh., 21, no. 6, 759 (1957)). The kinetic energy of the system is determined, and from it the Lagrangians are derived where the moments of reaction forces in the bearings are taken into account.

$$P_{z_2} = (A_2 + C_1)\ddot{\alpha}\, tg\, \beta + (C_1 + B_1 - A_1)\dot{\alpha}\dot{\beta}. \quad (1)$$

Card 1/3

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

is obtained for projecting the moment of reaction of the axle bearing of the outer gimbal onto the Oz_2 axis (Fig. 1). A_2 is the moment of inertia of the outer gimbal with respect to its axis of rotation, A_1, B_1, and C_1 are the moments of inertia of the inner gimbal, α, β, and γ are the angles of rotation of the outer gimbal with respect to the fixed base. The precession velocity of a gyroscope is approximated by means of the moments of reaction forces. Elastic deformations of the bearings are taken into account by introducing further degrees of freedom whose number equals that of the non-varnishing moments of reaction in the bearings. In general, five more degrees of freedom must be introduced. Calculations were conducted by K. Magnus, R. Gudsteyn, D. S. Pel'por, Ya. L. Lunts et al. S. S. Tikhmenev (Izv. Vyssh. uchebn. zaved., ser. Priborostroyeniye, 2, no. 5, 63 (1959)) and A. Yu. Ishlinskiy (Mekhanika spetsial'nykh giroskopicheskikh sistem, Kiyev, 1952) are mentioned. There are 2 figures and 4 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, S.A. (Moskva)

Motion of a gyroscope suspended on ball bearings in gimbals. Prik. mat. i mekh. 26 no.2:365-369 Mr-Ap '62. (MIRA 15:4)
(Gyroscope)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

41332
S/020/62/146/003/004/019
B172/B186

AUTHOR: Kharlamov, S. A.

TITLE: Nutation and drift of a gimbal-supported synchronous gyroscope

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 146, no. 3, 1962, 550-553

TEXT: A gyroscope spinning with great angular velocity is driven electrically in such a way that the inner frame of the suspension constitutes the stator and the gyroscope itself is the rotor, so as to eliminate losses due to friction and resistance. Lagrange equations are set up to determine the effect of the magnetic field in the non-perpendicular frames on nutation and drift. Two cases are discussed: (1) Nutation and drift when the external frame performs short-term rotations. (2) Forced vibrations when the geometric axis of the gyroscope does not coincide with the polar axis of inertia. There are 2 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

PRESENTED: April 6, 1962, by A. Yu. Ishlinskiy, Academician

SUBMITTED: March 30, 1962

Card 1/1

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, S. A. (Engineer)

"Some problems of the dynamics of a gyroscope with an electric drive installed in a gymbol suspension."

report presented at the Scientific-technical Conference on Modern Gyroscope Technology Ministry of Higher and Secondary Special Education RSFSR, held at the Leningrad Institute of Precision Mechanics and Optics, 20-24 November 1962.

(Izv. vysshikh uchebnykh zavedeniy. Priborostroyeniye, v. 6, no. 2, 1963)

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KHARLAMOV, S. A.

AID Nr. 990-6 14 June

SCIENTIFIC-TECHNICAL CONFERENCE ON MODERN GYROSCOPE TECHNOLOGY (USSR)

Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye, v. 6, no. 2, 1963, 133-138 S/146/63/006/002/010/010

The Fourth Conference on Gyroscope Technology, sponsored by the Ministry [illegible] Secondary Special Education RSFSR, was held at the Leningrad [illegible] Precision Mechanics and Optics from 20 to 24 November 1962. [illegible] was attended by representatives from 93 organizations in [illegible], including educational establishments, scientific research in-[illegible], and industrial concerns. The following are some [illegible] the 92 papers presented and discussed [illegible] the conference [illegible] gyroscope pendulum with a movable suspension [illegible] a nonuniform [illegible] M. Z. Litvin-Sedoy, Senior Scientific Worker [illegible] improving dynamic characteristics of some gyro instruments and devices. A. V. Reprikov, Docent, Candidate of Technical Sciences; some problems of the dynamics of a gyroscope with an electric drive installed in a gymbol suspension. S. A.

Card 1/3

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AID Nr. 990-6 14 June

SCIENTIFIC-TECHNICAL CONFERENCE [Cont'd] S/146/63/006/002/010/010

Kharlamov, Engineer; problems of the theory of the inertial method for measuring aircraft acceleration: I. I. Pomykayev, Docent, Candidate of Technical Sciences; determining the drift of a floated-type integrating gyroscope without the [illegible] dynamic stand: G. A. Slomyanskiy, Docent, Candidate of Technical [illegible]; natural damping of nutational vibrations of a gyroscope: N. V. Gusev, [illegible] of a not quite symmetrical gyroscope pendulum with vertically [illegible]: A. N. Borisova, Aspirant; gyros[illegible]-type [illegible]nometer for [illegible] vertical freezing wells: V. A. Sinitsyn, Candidate of Technical Sciences; [illegible] between channels in triaxial gyro-stabilized platform: L. N. [illegible], Engineer; theoretical proposal for the possible design of a generalized gyro instrument: M. M. Bogdanovich, Docent, Candidate of Technical Sciences; problem of drift in a power-type triaxial gyro stabilizer: V. N. Karpov, Engineer; methods of modeling random disturbances in gyro systems: S. S. Shishman, Senior Engineer; method of noise functions for investigating a system subjected to random

Card 2/3

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AID Nr. 990-6 14 June

SCIENTIFIC-TECHNICAL CONFERENCE [Cont'd] S/146/63/006/002/010/010

[illegible] Molotkov, Docent, Candidate of Technical Sciences, drifts in a gyro- [illegible] as a result of the effect of [illegible] determined and ran- [illegible] B. I. Nazarov, Docent, Candidate of Technical Sciences, stability [illegible] inhomogeneously rigid gyro systems with backlash under [illegible] S. A. Chernikov, methods of designing a gyro vertical with automatic latitude and course corrections: A. V. Til', Candidate of Technical Sciences; use of asymptotic methods in solving problems of the motion of an astatic [illegible] suspension; D. M. Klimov, Candidate of Physical and Mathe- [illegible] theory [illegible] of Technical S[illegible] parameters [illegible]

Card 3/3

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, S.A.

Nutational vibrations and drift of a synchronous gyroscope in gimbals. Dokl. AN SSSR 146 no.3:550-553 S '62. (MIRA 15:10)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom A.Yu.Ishlinskim.
(Gyroscope)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHAHLAMOV, S.A. (Moskva)

Theory of an astatic gyroscope in gimbals and with an electric drive. Izv. AN SSSR. Mekh. i mashinostr. no.6:45-54 N-D '63. (MIRA 17:1)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, S.A.

Correction of the article "Rigidity of axially tightened radial thrust bearing." Izv.AN SSSR. Mekh. i mashinostr. no.4:184 Jl-Ag '62. (MIRA 17:4)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

S/0179/64/000/002/0050/0060

ACCESSION NR: AP4035059

AUTHOR: Kharlamov, S. A. (Moscow)

TITLE: Application of Resal's Theorem to Determining the Dynamic Departures of a Gyroscope in a Cardan Suspension

SOURCE: AN SSSR. Izvestiya. Mekhanika i mashinostroyeniye, no.2, 1964, 50-60

TOPIC TAGS: gyroscope, Cardan suspension, vibration, gyroscope oscillations, precession, Resal theorem

ABSTRACT: Dynamic departures of a gyroscope in a Cardan suspension are defined as the departures caused by small oscillations of the axis of the figure of the gyroscope. This article considers dynamic departures that are caused by nutation oscillations, oscillations of a dynamically unbalanced gyroscope, forced oscillations of the gyroscope, and oscillations of a gyroscope attached to a vibrating base.

It is shown that departures of a gyroscope in a Cardan suspension for

Card 1/2

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

SEMAYN, Yu.A., inzh.; Prinimali uchastiye: KHARLAMOV, S.Kh., inzh.; BIRYULEV, V.G., inzh.; TAMANTSEVA, I.S., inzh.; IGLITSYN, I.L., red.; LARIONOV, G.Ye., tekhn.red.

[Study of ignitron characteristics and design of firing circuits] Issledovanie kharakteristik zazhigatelei i raschet skhem zazhiganiia ignitronov. Moskva, Gos.energ.izd-vo, 1960. 57 p. (Moscow. Vsesoiuznyi nauchno-issledovatel'skii institut elektroenergetiki. Informatsionnye materialy, no.56). (MIRA 14:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut elektroenergetiki (for Kharlamov, Biryulev, Tamantseva).
(Mercury-arc rectifiers)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

SHMAYN, Yu.A., kand.tekhn.nauk; KHARLAMOV, S.Kh., inzh.

Regulation of the ignition interval of an ionic current converter. Vest.elektroprom. 33 no.12:44-45 D '62. (MIRA 15:12)
(Electric current converters)

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of photo-emulsions. The photo-emulsions were filled with water and

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KHARLAMOV, S.P., ADAMOVICH, M.I., VEKSLER, V.I., KUZMICHEVA, G.V., LARIONOVA, V.G.

"Photoproduction of Negative π Mesons on Deuterium," paper presented at CERN Symposium, 1956, appearing in Nuclear Instruments, No. 1, pp. 21-30, 1957

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

AUTHORS: Adamovich, M. I., Kuz'micheva, G. V., Larionova, V. G., Kharlamov, S. P.

SOV/56-35-1-3/59

TITLE: The Photoproduction of π^--Mesons on Deuterium Near the Threshold (Fotorozhdeniye π^--mezonov na deyterii vblizi poroga)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol 35, Nr 1, pp 27 - 38 (USSR)

ABSTRACT: In several earlier papers (Refs 1-4) the ratio of the cross sections of the processes $\gamma+d \rightarrow p+p+\pi^-$ and $\gamma+d \rightarrow n+n+\pi^+$ has already been investigated ; Watson (Vatson) (Ref 4) showed that σ^-/σ^+ for deuterium corresponds to that for free nucleons. The authors of the present paper investigated the reaction $\gamma+d \rightarrow p+p+\pi^-$ on the 265 MeV synchrotron of the FIAN (Fizicheskiy institut Akademii nauk SSSR - Physics Institute AS USSR) with NIKFI-R photoemulsion plates which were enriched with deuterium (as D_2O). (Plates: $3,2.10^{22}$ deuterium nuclei per cm^3). The maximum energy of the γ-quanta amounted to 250 and 200 eV for a magnetic field with H=7000 Oe, in

Card 1/3

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the evaluation of the plates the microscope MBI -2 was used, for the determination of coordinates in the case of multiple scattering MBI -8. For the dependence of the cross section of meson production on photon energy ($5 < E < 30$ MeV, $p < 0,7$) experimental results are compiled in a table, where they are compared with theoretical results. Measuring results: 2,98 ± 0,50 (1,125), 5,90 ± 70 (1,175), 5,91 ± 0,91 (1,225), 3,66 ± 0,52 (1,30); (the values in brackets denote the photon energy [μc^2], the σ are given in units of $10^{-29} cm^2$). In chapter 4, a number of other experimental results is compared with the predictions of impulse approximation. It is shown that the square of the matrix element of the photoproduction of π-mesons by neutrons near the meson threshold is a constant and equal to

$|\bar{K}_n|^2 = (0,785 \pm 0,072).10^{-27} cm^2$. For $\sigma^-/\sigma^+ = |K_n|^2/|K_p|^2$ 1,34 ± 0,14 is obtained. In conclusion the authors thank Professor V.I.Veksler and A.M.Baldin for their valuable advice and assistance. There are 8 figures, 1 table, and

Card 2/3

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SOV/56-36-3-58/71

24(1)

AUTHORS: Kharlamov, S. P., Adamovich, M. I., Larionova, V. G.

TITLE: On the Amount of the Ratio σ^-/σ^+ Near the Threshold of Meson Photoproduction (O velichine otnosheniya σ^-/σ^+ vblizi poroga fotorozhdeniya mezonov)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 3, pp 945 - 947 (USSR)

ABSTRACT: The amount of the yield ratio of negative and positive photomesons from deuterium $\eta = N_d^-/N_d^+$ may deviate considerably from the value σ^-/σ^+ for pion-photoproduction on free nucleons. This fact has already been investigated in reference 1. A table contains the pion yield ratios for 165 and 310 Mev from deuterium at angles of 60 and 73° to the direction of photon radiation. The table further gives the η-values from these experiments with correction to the Coulomb (Kulon) interaction (π^-,p) and (p,p) and a correction which takes into account that π^--and π^+-mesons of one and the same energy can be formed by photons from different energy intervals. The σ^-/σ^+-values are smaller than the corresponding yield conditions, the difference becomes smaller with in-

Card 1/3

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creasing energy. The corrections are then discussed. Figure 1 shows the experimentally found π^--distribution according to momenta in the reaction $\gamma+d \longrightarrow \pi^-+p+p$ for photons between 155 and 165 Mev (cf.Ref 1). Figure 2 shows the dependence pion yield (6.7 - 11.7 Mev) at an angle of 60° to the photon direction, on the energy of γ-quanta. The π^+-curve is lower and has a lower maximum than the π^--curve, which is also shifted somewhat in the direction of higher energies. The curves are normalized according to

$\left[N_d^{\pm} = \int_{\nu_{min}}^{\nu_m} N_d^{\pm}(\nu)d\nu\right] = \left[N_d^-/N_d^+ = 2.10\pm0.17\right]_{exp}$ (Ref 3). For a photon energy of ν 160 Mev and a Coulomb correction equal to 1.065 1.30±0.11 results for σ^-/σ^+. If in the Carlson-Lee experiment the upper boundary of the spectrum is established not at 165 but at 167 Mev, the

N_d^-/N_d^+ agree with $\sigma^-/\sigma^+ = 1.42\pm0.12$. This shows the important

Card 2/3 influence exercised by this boundary. This is particularly

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On the Amount of the Ratio σ^-/σ^+ Near the Threshold of Meson Photoproduction SOV/56-36-3-58/71

marked in the photoproduction of charged mesons on beryllium ($\gamma+Be^9_4 \rightarrow \pi^-+p+Be^8_4$), which has an energy threshold that is by 17.9 Mev lower than that of π^+-production. This explains the anomalous behavior of the quantities N^-/N^+ if the upper boundary of the spectrum is decreased, as also in the case of an increase of the energy or of the flying-off angle of the recorded mesons. There are 2 figures, 1 table, and 5 references, 2 of which are Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences, USSR)

SUBMITTED: November 26, 1958

Card 3/3

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KHARLAMOV, S. P.

S/056/61/041/006/023/054
B102/B138

AUTHORS: Adamovich, M. I., Gorzhevskaya, E. G., Larionova, V. G., Panova, N. M., Popova, V. M., Kharlamov, S. P., Yagudina, F.R.

TITLE: The energy dependence of the photoproduction cross section of π^+ mesons on hydrogen near the threshold

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 6(12), 1961, 1811-1817

TEXT: The paper gives results of π^+ photoproduction cross section measurements made in the photon energy range from 167 to 212 Mev at an angle θ = arccos(k -0.93)/kq, i. e. the angle in the c. m. s. at the contribution of the non-physical region to the dispersion integral vanishes. k denotes the photon momentum, 0.93 is its threshold, q and ε are momentum and total energy of the pion, θ the angle of emission of the meson; $\hbar$ = c = μ = 1. The energy range was chosen so as to satisfy the relation kε - kq cos θ = 0.93; it holds exactly for 195-Mev photons, for 167 and 212 Mev it is 0.88 and 0.99, which are both close to the threshold value. The photon ray from the synchrotron of the FIAN with a maximum

Card 1/4

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energy of 250 Mev was collimated and directed on to the hydrogen target, a brass cylinder of 17μ wall thickness, placed in a vacuum chamber. The detector was a stack of 50 layers of [illegible]-400 (NIKFI BK-400) emulsion plates. It was placed between two 2cm-thick emulsion blocks and fixed so that the mesons struck its end. The emulsions were evaluated as usual, by [illegible]-1 (MBI-1) microscopes. All π-μ decay events were selected. An area of 340 cm^2 yielded 3322 π-μ decays and 64 π^- decays. The differential photoproduction cross sections were plotted after applying corrections for energy loss, scattering meson decay and background (Fig. 3). The results are in good agreement with dispersion theory, where the imaginary part of the resonance amplitude is determined empirically. The experimental results were treated by the method of least squares to find the threshold value of the matrix element of π^+ photoproduction $(^{-1}d\sigma/d\Omega$ and its dependence on q^2; $\ldots = (q/k)(1+\ldots/M)^{-2}$, M - nucleon mass. For $0.17 < q^2 < 0.74$

$$\frac{1}{\chi}\frac{d\sigma}{d\Omega}\left[10^{-30}\frac{cm^2}{cm\,sp\,ad}\right] = (1{,}90 \pm 0{,}15) - (0{,}34 \pm 0{,}22)\,q^2. \quad (5)$$

$$\frac{1}{\chi}\frac{d\sigma}{d\Omega}\left[10^{-30}\frac{cm^2}{cm\,sp\,ad}\right] = (2{,}39 \pm 0{,}21) - (2{,}87 \pm 0{,}93)\,q^2 + (2{,}80 \pm 1{,}0)\,q^4. \quad (6)$$

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was found. The threshold value was determined from power expansions of the squares of the matrix elements, $a_0 = (1.90 \pm 0.15)\cdot 10^{-29}$ cm^2/steradian, which is in good agreement with the theoretical value, $a_0 = 2.04\cdot 10^{-29}$ cm^2/steradian. Experimentally, $\sigma^-/\sigma^+ = 1.34 \pm 0.11$ was found. Using the theoretical a_0 value, the calculated value is $\sigma^-/\sigma^+ = 1.28$. The pion photoproduction cross section as a function of the photoproduction amplitudes is given by

$$d\sigma/d\Omega = (q/k)\,(|F_1|^2 + |F_2|^2 - 2\mathrm{Re}\,F_1^* F_2 \cos\theta + \frac{1}{2}\sin^2\theta\,(|F_3|^2 + |F_4|^2 + 2\mathrm{Re}\,F_3^* F_4 + 2\mathrm{Re}\,F_1^* F_4 + 2\mathrm{Re}\,F_3^* F_4 \cos\theta)). \quad (9)$$

with

$$F_1 = \sqrt{2}F_{10} - \sqrt{2}F_{11}\cos\theta, \qquad F_2 = \sqrt{2}F_{20},$$
$$F_3 = \sqrt{2}F_{30} + \sqrt{2}F_{31}/(1-\beta\cos\theta), \qquad F_4 = \sqrt{2}F_{41}/(1-\beta\cos\theta);$$

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β denotes pion velocity. From experimental data for 15 and 165° in the c. m. s. the amplitudes were calculated for 105-Mev photons:

$$|(F_{10})_1 = (1,81 \pm 0,034)\cdot 10^{-2}, \qquad (F_{11} + F_{20})_1 = -(0,105 \pm 0,034)\cdot 10^{-2}.$$

$$(F_{10})_2 = -(1,81 \pm 0,034)\cdot 10^{-2}, \qquad (F_{11} + F_{20})_2 = (0,105 \pm 0,034)\cdot 10^{-2}.$$

The authors thank Professor P. A. Cherenkov for help, A. M. Baldin and A. I. Lebedev for discussions and A. A. Svetlov, Engineer, for assistance.
There are 5 figures, 2 tables, and 15 references: 3 Soviet and 12 non-Soviet. The four most recent references to English-language publications read as follows: J. Hamilton, W. S. Woolcock. Phys. Rev. 118, 291, 1960; H. P. Samios. Phys. Rev. Lett., 4, 470, 1960; M. Derrick et al. Phys. Rev. Lett., 5, 230, 1960; A. F. Dunaitsev et al. Proc. 1960 Ann. Intern. conf. on high energy physics at Rochester, Publ. Univ. Rochester 1961, p. 161.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: July 31, 1961

Card 4/4

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

ADAMOVICH, M. I.; GONCHEVSKAYA, E. G.; KHARLAMOV, S. P.; LARIONOVA, V. G.; YAGUDINA, F. H.

"Photoproduction of Positive Pions from Hydrogen near Threshold"

report presented at the 11th Intl. Conference on High Energy Physics, Geneva, 4-11 July 1962

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

ACCESSION NR: AT3012928 S/2504/63/019/000/0037/0065

AUTHORS: Adamovich, M. I.; Larinova, V. G.; Kharlamov, S. P.

TITLE: Investigation of the photoproduction of negative pions on deuterium near threshold

SOURCE: AN SSSR. Fizicheskiy institut. Trudy*, v. 19, 1963, 37-65

TOPIC TAGS: pion, Pi meson, photoproduction, negative pion photoproduction, photoproduction on deuterium, photoproduction near threshold, emulsion technique. Panofsky ratio, pion pion interaction

ABSTRACT: In view of the scarcity of experimental work on the photoproduction of charged pions on deuterium near threshold, the authors investigated this reaction using type "R" NIKFI emulsions 400 microns thick, sensitive to relativistic-particle tracks, filled with heavy water, and irradiated directly in a photon beam so that the emulsion serves simultaneously as a target and a detector. The experimental procedure and the method used to identify the reaction and determine the photon flux are described. The method of determining the photon

Card 1/~~8~~ 2

PHYSICS INST. AN SSSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

ACCESSION NR: AT3012928

flux from the measured photon energy flux was developed by V. Ye. Pisarev and V. S. Roganov. The experimental data were plotted in laboratory-system photon energy and pion momentum coordinates, with an upper pion energy limit 30 MeV. The resultant diagram could be used to determine many of the characteristics of the $\gamma + d \rightarrow p + p + \pi^-$ reaction, viz. the final state of the particles and the initial state of the nucleons. The experimental data agree with the theory in the impulse approximation. The confirmation of the impulse-approximation theory makes it possible to determine the square of the matrix element for the photoproduction of negative pions on free neutrons. The procedure for this determination is described. The Panofsky ratio obtained from the experimental data is 1.57 ± 0.1, which agrees with the average of the measured values obtained by others (1.54 ± 0.015). Further study of the threshold parameters may yield interesting information on the effect of pion-pion interaction on pion photoproduction. "In conclusion, the authors are deeply grateful to A. M. Baldin and Academician V. I. Veksler for continuous interest, valuable advice, and discussion." Orig. art.

Card 3/3

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[illegible] and R. S. Ilyarov for assistance [illegible]

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...ovich, M. I.; Larionova, V. G.; Lebedev, A. I.; Kharlamov, S. P.; ...

TITLE: Determination of the isotopic spin components of the $\gamma + N \rightarrow N + \pi$ amplitude at threshold

SOURCE: Yadernaya fizika, v. 2, no. 1, 1965, 135-143

TOPIC TAGS: gamma scattering, scattering cross section, differential cross section, proton scattering, photonuclear reaction

ABSTRACT: The differential cross sections for the process $\gamma + p \rightarrow n + \pi^+$ for laboratory-system pion angles 16, 24, 36, 56, 64, and 76° have been measured in the photon energy region 165-230 MeV. The experiments were performed with the FIAN (Physics Institute of the Academy of Sciences) 265-Mev electron synchrotron, using a liquid-hydrogen target. The pion detector was a stack of NIKFI BK-600 nuclear pellicles. The bremsstrahlung flux was measured with a quantum meter. The positive-pion photoproduction amplitude in the S state was obtained for zero pion momentum by extrapolating the empirical dependence of the cross section on the pion momentum to the threshold. Data on the process $\gamma + n \rightarrow p + \pi^-$ were analyzed in the same manner and the corresponding negative-pion photoproduction amplitude obtained. These amplitudes, together with the similar amplitude x for neutral-pion photoproduction, are used to

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L 4384-66

ACC NR: AP5020265

3

find the isoscalar and isoscalar parts of the photoproduction amplitudes, which are compared with the theoretical predictions. The agreement is not particularly good, [illegible] because of the low accuracy with which the S-wave photoproduction amplitudes [illegible]. "The authors thank Professor P. A. Cherenkov and A. M. Baldin for their [illegible] for a discussion of this work." Orig. art. has: 5 figures, 8 formulas, [illegible]

[illegible] [illegible]zicheskiy institut im. P. N. Lebedeva Akademii [illegible] [illegible] [illegible] [illegible]iences, [illegible]R)

[illegible] [illegible] [illegible]

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L 12007-66 EWT(m)/T/EWA(m)-2

ACC NR: AP6001779 SOURCE CODE: UR/0386/65/002/010/0490/0494

AUTHOR: Adamovich, M. I.; Larionova, V. G.; Lebedev, A. I.; Kharlamov, S. P.; Yagudina, F. B.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Determination of the $\gamma\pi\rho$ interaction constant

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 10, 1965, 490-494

TOPIC TAGS: Gamma interaction, meson interaction, photon scattering, dispersion equation

ABSTRACT: The authors attempt an indirect determination of the $\gamma\pi\rho$ interaction constant Λ, from data on single photoproduction of pions from nucleons. The contribution of the ρ meson to the photoproduction amplitudes is separated by comparing the experimental data with theoretical calculations based on rigorous dispersion relations, since such an analysis is sensitive to the accuracy with which the dispersion integrals are calculated. The authors' main purpose in this paper is (i) to find for the photoproduction processes a differential characteristic for which the theoretical uncertainties are minimal or nil, and (ii) analyze the cor-

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responding experimental data for the purpose of determining the constant A. To avoid the uncertainties connected with the imaginary parts of the photoproduction amplitudes, they confine themselves to a consideration of the near-threshold region of photon energies. The contribution of the subtraction constant is neglected. By making use of published data and their own results (Dokl. AN SSSR v. 158, 309, 1964) on the differential cross sections of the process $\gamma + p \rightarrow n + \pi^+$, the authors conclude that more accurate values of the differential cross sections of the processes $\gamma + p \rightarrow n + \pi^+$ and $\gamma + n \rightarrow p + \pi^-$ in the near-threshold region of energy can yield more definite information on the constant A. To obtain data on the latter process it is necessary to study further the processes $\gamma + d \rightarrow p + p + \pi^-$ and $\pi^- + p \rightarrow n + \gamma$. Authors are grateful to Corresponding Member AN SSSR P. A. Cherenkov and Professor A. M. Baldin for useful discussions and interest. Orig. art. has 2 figures and 6 formulas.

SUB CODE: 20/ SUBM DATE: 05Oct65/ ORIG REF: 003/ OTH REF: 002

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

28 (2) SOV/115-59-10-26/29

AUTHOR: Kharlamov, S.S., Laboratory Chief

TITLE: About the Organization and Activities of Testing Laboratories in Plants

PERIODICAL: Izmeritel'naya tekhnika, 1959, Nr 10, p 60 (USSR)

ABSTRACT: The article contains comments on the article by K.N. Katsman entitled "About Some Problems of Organization and Activities of Measuring Laboratories in Plants" which appeared in the "Izmeritel'naya tekhnika", 1959, Nr 2. The author quotes, along with the article by K.N. Katsman, the article by B.W. Vorontsov, entitled "Urgent Tasks of Supervisory Departmental Organizations" published in the "Izmeritel'naya tekhnika", 1959, Nr 2. The author emphasizes that there is no liaison between various laboratories of a plant. He approves of the proposition put forward by K.N. Katsman to unite all laboratories of a plant into one central laboratory under the supervision of the chief engineer of the plant. In the present system, various la-

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SOV/115-59-10-26/29

About the Organization and Activities of Testing Laboratories in Plants

boratories of a plant are under the supervision of different sections of the plant. The TxZL - Tsentral'naya zavodskaya laboratoriya (Central Plant Laboratory) is under the supervision of the chief engineer, the TsIL - Tsentral'naya izmeritel'naya laboratoriya po linyeno-uglovym izmereniyam (Central Measuring Laboratory for Linear-Angular Measuring) is under the supervision of the chief of OTK, the electro and thermo-measuring laboratories under the chief energetics engineer and consequently there is no coordination in their work. A complete reorganization of measuring laboratories and their merger into one central measuring laboratories are long overdue.

ASSOCIATION: TsIL, Bryansk

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, S.V.

Designing a stirring mechanism for cream ripening vats. Izv. vys. ucheb. zav.; pishch. tekhn. no.3:89-95 no.3:89-95 '58.

1. Leningradskiy tekhnologicheskiy institut kholodil'noy promyshlennosti, Kafedra tekhnologicheskogo oborudovaniya pishchevykh produktov.
(Dairy industry--Equipment and supplies)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, S.V.

Selecting the most efficient sizes for rectangular packing. Izv.vys.uchob.zav.; pishch.tekh. no.2:97-101 '59. (MIRA 12:8)

1. Leningradskiy tekhnologicheskiy institut kholodil'noy promyshlennosti.
(Food--Packaging)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, S.V.; SHUVALOV, V.N.

Selecting the optimum parameters of rectangular packages taking the operative efficiency of wrapping machines into account. Izv. vys.ucheb.zav.; pishch.tekh. no.3:82-86 '62. (MIRA 15:7)

1. Leningradskiy tekhnologicheskiy institut kholodil'noy promyshlennosti, kafedra tekhnologicheskogo oborudovaniya pishchevykh proizvodstv.
(Packaging) (Wrapping machines)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

RAGUZIN, V.M., inzh.; SMIRNOV, Ye.S., inzh.; KHARLAMOV, S.Ya., inzh.

Prevent the spontaneous shooting of perforators and torpedoes.
Bezop. truda v prom. 5 no. 2:13-14 F '61. (MIRA 14:2)
(Oil fields—Safety measures)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, S.Ya.

New design for a hermetic blasting cartridge. Razved. i prom. geofiz. no.46:127 '62. (MIRA 16:3)

(Blasting--Equipment and supplies)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, S.Ya.

Use of cast trotyl charges to torpedo wells. Razved. i prom. geofiz. no.46:128-129 '62. (MIRA 16:3)
(Oil wells--Equipment and supplies)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, T.F., inzh.

New dust collector. Bezop.truda v prom. 4 no.3:22 '60. (MIRA 13:6)

(Dust collectors)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

MEL'NIKOV, N.V., red.; ASSONOV, V.A., red.; BARON, L.I., red.; DEMIDYUK, kand.tekhn.nauk, red.; DOKUCHAYEV, M.M., gornyy inzh., red.; PETROV, N.G., kand.tekhn.nauk, red.; SOSEDOV, O.O., red.; KHAHLAMOV, T.F., red.; MAKSIMOVA, Ye.P., red.; RATNIKOVA, A.P., red.izd-va; SHKLYAR, S.Ya., tekhn.red.; KOROVENKOVA, Z.A., tekhn.red.

[Improvements in boring and blasting operations in the mining industry; transactions of the Scientific and Technical Conference on Boring and Blasting Operations] Trudy Nauchno-tekhnicheskogo soveshchaniya po burovzryvnym rabotam: Sovershenstvovanie burovzryvnykh rabot v gornoi promyshlennosti. Pod red. N.V.Mel'nikova. Moskva, Ugletekhizdat, 1959. 443 p. (MIRA 12:4)

1. Nauchno-tekhnicheskoye soveshchaniye po burovzryvnym rabotam, 3d, Moscow, 1958. 2. Chlen-korrespondent AN SSSR (for Mel'nikov). 3. Institut gornogo dela AN SSSR (for Demidyuk). 4. Vsesoyuznyy trest po burovym i vzryvnym rabotam (for Dokuchayev). 5. Vsesoyuznyy nauchno-issledovatel'skiy ugol'nyy institut (for Petrov).
(Boring) (Blasting)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, T.F.; ABRAMSON, M.A.

Drilling rigs for open-pit mining. Gor. zhur. no.1:58-62 Ja '62. (MIRA 15:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut burovoy tekhniki.

(Boring machinery)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, T.F., inzh.; ABRAMSON, M.G., inzh.

New drilling rigs for underground work. Gor. zhur. no.2: 58-61 F'62. (MIRA 17:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut burovoy tekhniki.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

ABRAMSON, M.G.; KHARLAMOV, T.F.

Technical and economic indices of boring blastholes in underground mines of the U.S.S.R. Gor. zhur. no.5:34-38 My '63. (MIRA 16:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut burovoy tekhniki, Moskva.

(Boring)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, V.

In search of new forms. Okhr. truda i sots. strakh. 3 no.8:21-22 Ag '60. (MIRA 13:9)

1. Tekhnicheskiy inspektor Barabinskogo otdeleniya Omskoy zheleznoy dorogi.

(Railroads--Safety measures)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, V.A., inzh.

Creep test of refractory concretes at high temperatures.
Trudy NIIZHB no.6:157-176 '59. (MIRA 12:10)
(Concrete--Testing)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, V. A.

Cand Tec Sci, Diss -- "Creep of heat-resistant concretes at high temperature". Moscow, 1961. 15 pp, 21 cm (Acad of Cons and Architecture USSR. Central Sci Res Inst of Building Constructions "TSNIISK"), 150 copies, Not for sale (KL, No 9, 1961, p 185, No 24376). [61-54108]

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, V.A.

City planning in Tuva. Uch.zap.Tuv.nauch.-issl.inst.iaz.lit.i ist. no.9:72-81 '61. (MIRA 15:5)
(Tuva A.S.S.R.—City planning)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

OCHUR, V.Ch.; ROVNOV, V.I.; SERDOBOV, N.A.; UROYAKOV, S.Ch.; KHARLAMOV, V.A.; SERDOBOV, N.A., red.

[Kyzyl, capital of Soviet Tuva, 1914-1964] Kyzyl - Stolitsa Sovetskoi Tuvy (1914-1964). Kyzyl, Tuvinskoe knizhnoe izd-vo, 1964. 127 p. (MIRA 17:6)

1. Kyzyl. Tuvinskiy nauchno-issledovatel'skiy institut yazyka, literatury i istorii.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, V.F., inzh. (stantsiya Barabinsk Omskoy dorogi)

Pneumatic cleaning of switches. Put' i put.khoz. no.11: 16-18 N '59. (MIRA 13:4)
(Railroads--Barabinsk--Switches)
(Pneumatic tools)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, V.F., inzh.; KARPENKO, Ye.F.

Preparation and use of dry graphite lubricants in railroad repair shops. Elek.i tepl.tiaga. 4 no.6:6-8 Je '60. (MIRA 13:8)

1. Glavnyy inzhener depo Barabinsk Omskoy dorogi (for Karpenko)
(Railroads--Repair shops) (Graphite)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, V.F., inzh. (g.Barabinsk)

Illumination of railroad stations on electrified railroad districts. Svetotekhnika 6 no.5:22-24 My '60. (MIRA 13:12)
(Electric railroads--Stations--Lighting)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

MIKHAYLOV, V.G., professor, doktor.;KHARLAMOV, V.I., assistant.

Experiments in drilling holes in iron ore. Nauch. trudy NPI 26:58-63 '55. (MIRA 9:12)

(Boring)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, V. I.

KHARLAMOV, V. I.: "Turbo transmission on a self-propelled grader." Moscow, 1955. Min Higher Education USSR. Moscow Automobile and Road Inst imeni V. M. Molotov. (Dissertation for the Degree of Candidate of Technical Sciences)

SO: Knizhnaya Letopis' No. 47, 19 November 1955. Moscow.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, V.I., kand.tekhn.nauk

Determining gear ratio for a gearbox with a turbine transformer. Vest.mash. 40 no.5:29-31 My '60. (MIRA 14:4)
(Motor vehicles—Transmission devices)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

MARKOV, A.N., inzhener; KHARLAMOV, V.M., inzhener; IOFFE, Ye.F., inzhener; MIRONOV, Ye.P., dotsent; ZEYLIDZON, Ye.D., inzhener.

Extent of telecontrol of substations. Elek.sta.26 no.12:43-49 D '55. (MLRA 9:4)

1.Yaroslavskaya elektroenergeticheskaya sistema (for Markov).2.Glavnoye upravleniye elektrostantsiy i elektrosetey Yuga (for Kharlamov). 3.Tekhnicheskoye upravleniye MES (for Zeylidzon).
(Electric substations) (Remote control)

CERTAIN SUGGESTIONS ON THE NECESSITY [illegible] AND EXTENT OF REMOTE CONTROL INSTALLED AT SUBSTATIONS ARE MADE BY THE AUTHOR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, V. M.

104-3-16/45

AUTHOR: Kharlamov, V.M.

TITLE: On electricity supply for telemechanics (remote control) systems. (Ob elektropitanii ustroystv telemekhaniki)

PERIODICAL: "Elektricheskiye Stantsii" (Power Stations), 1957, Vol. 28, No.3, pp. 53 - 54 (U.S.S.R.)

ABSTRACT: The main causes of insufficient reliability of remote control equipment may be deduced from generalisation of data on the operation of more than 50 remote controlled sub-stations, several hydro-electric power stations and a number of tele-mechanised load control points.

Total outages of telemetering equipment amounted to 4.73% and of telecontrol equipment 2.14% and for both kinds of equipment about 30% of the outages were due to supply failure. Supply failures are a kind of fault which can and should easily be put right.

Recommendations are then made about the types of supply to use with different kinds of remote control equipment. For example it is recommended that supply arrangements to main load control points of power systems and with very slight differences to regional control points should include two 48 V accumulators, two rectifiers and a motor-generator set to supply a.c. Various qualifications of this recommendation are made according to circumstances.

Card 1/2

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104-3-16/45

On electricity supply for telemechanics (remote control) systems. (Cont.)

Main sub-stations which are controlled from a load control centre but are themselves control points for other sub-stations should have a 48 V rectifier equipment with voltage stabilisation within the limits of 70 - 105% rated voltage, and smoothing filter.

Controlled points should be supplied by rectifier with provision for emergency operation from a tapping on the main operating accumulator.

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Kharlamov, V. M.

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

PHASE I BOOK EXPLOITATION SOV/4403

Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki

Avtomaticheskoye upravleniye; [sbornik rabot] (Automatic Control; Collected Works) [Moscow] Izd-vo AN SSSR [1960] 431 p. Errata slip inserted. 5,500 copies printed.

Ed.: Ya.Z. Tsypkin, Doctor of Technical Sciences, Professor; Ed. of Publishing House: Ye.N. Grigor'yev; Tech. Ed.: G.A. Astaf'yeva.

PURPOSE: This collection of reports is intended for scientists and engineers engaged in the study of automation.

COVERAGE: The collection contains reports presented at the 6th Conference of Young Scientists of the Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics of the Academy of Sciences USSR) in January 1959. The collection covers a wide range of scientific and technical problems connected with automatic control. No personalities are mentioned. References accompany each report.

Darlagny, V.N. Systems of Combined Signals Utilizing Frequency-Pulse Attributes for Remote Control of Concentrated Objects 354

In considering the information theory and the structure of signals, the frequencies have been analyzed as information carriers and as combination elements. After analyzing in detail the features, combinations, and general classification of signal systems, the author describes the discrete time methods of remote control in which time, polarity, amplitude, phase, mixed signal systems, and combined systems are used in varying degrees. Investigations were conducted using parallel and series signals with a varying number of pulses, amplitude and frequency modulation, and d-c signals with varying pulse duration. There are 3 references, all Soviet.

PART IV. AUTOMATED DRIVE

Boyarchenkov, M.A. Reversing D-C Drive Equipped With Magnetic Amplifiers 364

A system for the speed regulation of d-c drives which permits the reversal of speed has been designed and experimentally tested at the Institute of Automation and Telemechanics of the Academy of Sciences USSR. Speed control is obtained by charging, in a magnetic amplifier, the voltage fed into the drive's armature. According to the author, this system is free from the defects found in the majority of d-c drive control systems as described in works published on this subject. There are 4 references: 1 Soviet, and 3 English.

Volik, B.G. Experimental Investigation of Induction Motors With a Solid Shenfer Rotor 373

The author states that sufficiently accurate theoretical methods for determining the rated power of a motor with a solid Shenfer rotor do not exist, and therefore experimental data has an important value. In the practical realization of a system of speed regulation, it was found that specifications for motors of the AOS series with a Shenfer rotor were raised in the region of low speeds approximately 2.5 to 3 times. The author describes a method used for an accurate determination of admissible loading limits of such motors in a wide range of speeds during continuous operation. He suggests using the obtained data for calculating the rated power of motors of the A and AO series for capacities ranging from 2 to 14 kw. There are 4 references, all Soviet.

KHARLAMOV, V.N.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

S/194/61/000/007/019/079
D201/D305

6.7800

AUTHOR: Kharlamov, V.M.

TITLE: Signalling systems with pulsed frequency markers

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 7, 1961, 51, abstract 7 V379 (V sb. Prom. telemekhanika, M., AN SSSR, 1960, 130-145)

TEXT: Problems are considered in designing signalling systems with the use of pulsed frequency markers. Classification and determination of frequency signals is given. Comparison is given of combinations of the following multiple pulse frequency systems of signalling in telemechanis: Alternating-grade, corresponding-grade, alternate-grade with single error detection, alternate-grade with combined use of pulse markers, corresponding-grade with combined use of pulse markers. The interference-killing features of systems is determined. 5 references. [Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, V.N., inzh.

Equipment for unloading forzen freight from hopper cars and flatcars. Zhel. dor. transp. 41 no.2:80-82 F '59.
(MIRA 12:3)
(Railroads--Equipment) (Loading and unloading)
(Railroads--Freight cars)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, Vyacheslav Nikolayevich; SAMOKHOTSKAYA, E.A., ved. red.

[Automatic unloading of loose freight from railroad cars] Avtomatizirovannaia vygruzka sypuchikh gruzov iz zheleznodorozhnykh vagonov. Moskva, GOSINTI, 1964. 39 p. (Mekhanizatsiia i avtomatizatsiia tekhnologicheskikh protsessov; materialy zavodskogo opyta, no.12) (MIRA 18:2)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARLAMOV, V.N. (Riga 13, Gospital'naya ul., d.55); DASHKOV, B.T. (Riga 13, Gospital'naya ul., d.55); REPIN, A.I. (Riga 13, Gospital'naya ul., d.55); BUNCHENKO, A.I. (Riga 13, Gospital'naya ul., d.55)

Results of regional perfusion in some diseases of the lower extremities. Ortop. travm. i protez. 26 no.6:22-24 Je '65. (MIRA 18:8)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000721820018-2

KHARAMOV, Vyacheslav Nikolayevich; SAMOKHOTSKAYA, E.A., ved. red.

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