Theory of the Motion of a Body With Cavities Partly Filled With a Liquid, by D. E. Okhotsimskiy, 21 pp.

RUSSIAN, per. Prik Matemat i Mekh, Vol XX, No 1, Jan/Feb 1956, pp 3-20.

NASA TT F-33

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May 60

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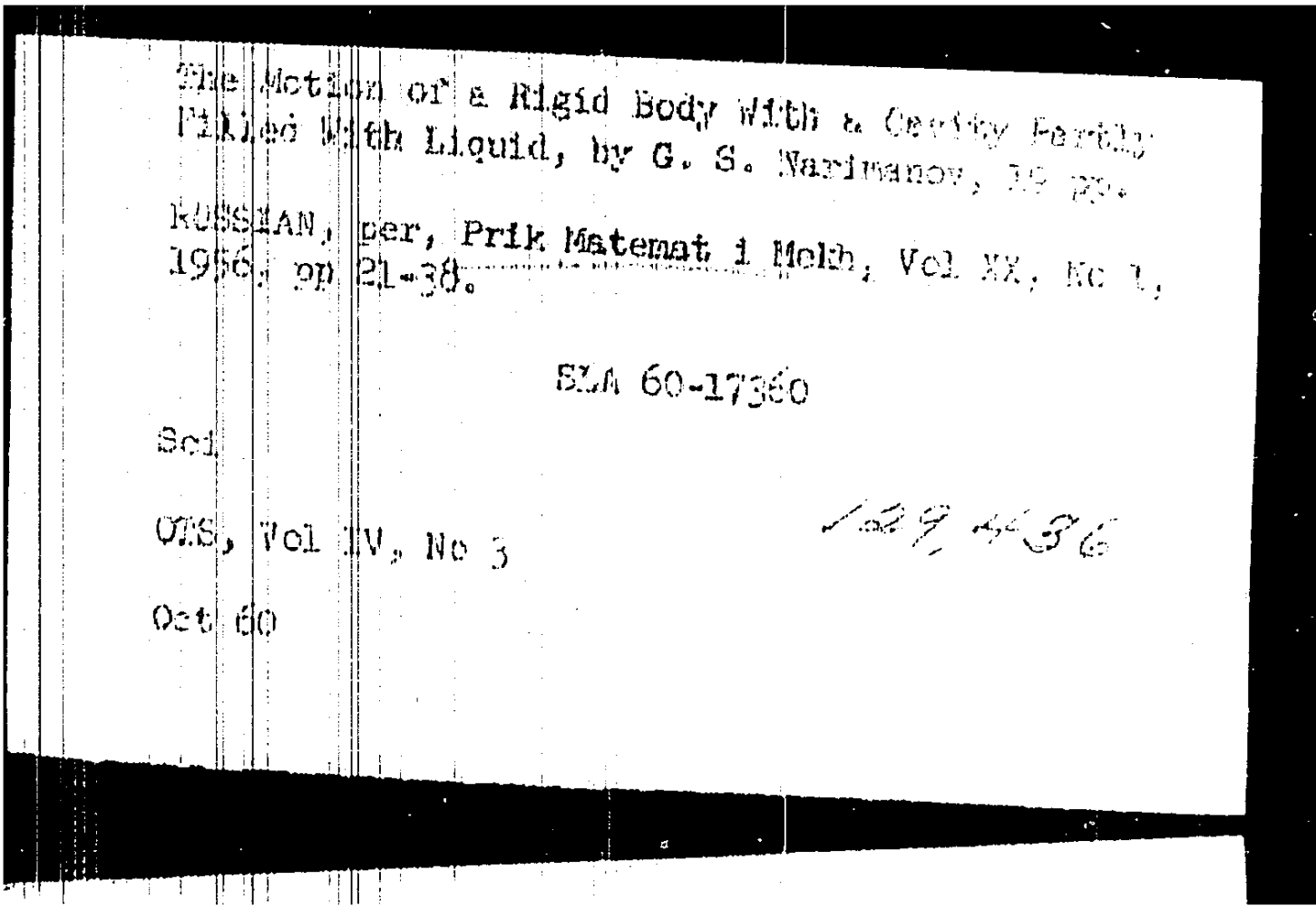

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Impact on a Compressible Fluid, by I. T. Egorov,
12 pp.

RUSSIAN, per. Prik. Matemat i Mekh, Vol XX, No 1,
1956, pp 67-72.

NACA TM 1413

Sci - Phys

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Sokolovskii, V. V.
THE FORMS OF STABLE SEMI-ARCHES AND ARCHES (O Formakh Ustoichivykh Polusvodov i Svodov). Jan 60 [16]p. 5 refs. TIL/T. 4880; [DSIR LLU] M. 2694; AD-245 810.
Order from OTS or SLA $1.60 61-27046

Trans. of Prik[ladnaya] Mat[ematika i] Mekh[anika] (USSR) 1956, v. 20, no. 1, p. 73-86.

DESCRIPTORS: *Continuous media, Elasticity, Plasticity, Rupture, Internal friction.

An investigation is made of the two-dimensional limiting equilibrium of a connected medium with free contours, this being accompanied by rupture curves. Consideration is devoted to the limiting equilibrium of semi-arches and arches resulting from their own weight and an example is given of the determination of rupture
(Mechanics--Statics, TT, v. 6, no. 10) (over)

61-27046

1. Title: Arches
2. Title: Semi-arches
I. Sokolovskii, V. V.
II. TIL/T. 4880
III. Ministry of Aviation (Gt. Brit.)
IV. DSIR LLU M. 2694
V. AD-245 810

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On the Theory of Stream Flow Around Bodies of Low Aspect Ratio, by M. N. Kogan,

RUSSIAN, per, Prik Matemat i Mekh, Vol XX, No 1, 1956, pp 87-94.

*Rand Corp

Sci - Physics
Jan 59

as per telephone conversation with Mrs Wisniewski

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Loytsyanskiy, L. G.
ON THE THEORY OF SPHERICAL BEARING. [1961]
[8]p. (foreign text included) 2 refs. [DSIR LLU]
M. 2605.
Order from OTS or SLA $1.10 61-23273

Trans. of Prikl[adnaya] Mat[ematika i] Mekh[anika]
(USSR) 1956 [v. 20] no. 1, p. 133-135.

DESCRIPTORS: *Fluid flow, Analysis, Spheres, Theory

An analysis is presented of the motion of an incompressible fluid located between a stationary outer sphere and a moving inner sphere of approximately the same diameter. The integral found by G. H. Wannier (Quart. Applied Math. 8: 1-32, 1950) is used: the Reynolds equation corresponds to the case of rotation of the inner sphere around the axis perpendicular to the line joining sphere centers. The formulae of the main vector and of the main moment of the fluid re-

(Mechanics--Hydrodynamics, TT, v. 6, no. 3) (over)

I. Loytsyanskiy, L. G.
II. DSIR LLU M. 2605

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xx Subsonic Flow Past a Profile in the Presence of a Supersonic Region, Which Terminates in a Straight Compression Shock, by F. I. Frankl, 12 pp.
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HB/514 Jr 1654
AF 1042683

Sci - Physics, aerodynamics 42,781
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APPROVED FOR RELEASE: 2005/08/30 CIA-RDP91-00772R000301800014-1

The Periodic Solutions of Differential Equations, by N. P. Erugin. UECL

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Sci. - Math

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On Vibrations of a Plate Moving in A Gas,
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RUSSIAN, pmm, Prik Matemat i Mekh, Vol XX,
No 2, 1956, pp 211-222.

NASA NR 11-22-58W

Sci - Phys

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A problem of heat conduction for two media, by D. Shil'krut, 11 pp.

RUSSIAN, per, Prikl Mat i Mekh, 20, no 2, p 284-88, 1956.

SLA R-3623

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Concerning the Application of A. M. Lyapunov's Method for Equations with the Lags, by N. N. Krasovskiy.

RUSSIAN, per, Prik Matemat i Mekh, Vol XX, 1956, pp 325-327.

INSDOC-T1909

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Laminar Boundary Layer of a Compressed Gas on a Plate in the Case of Considerable Temperature Heads, by V. V. Lunev. UNCLASSIFIED

PMM-Rus, Prik Mat i Mekh, Vol XX, No 3, 1956, pp 395-401. CIA 9031276

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Jun 58

Approximate Solution of Some Nonstationary Boundary Layer Problems, by E. M. Kobrynskaya.
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FTD-TT-65-1744

Sci - Math Sci
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Order from OTS or SLA $2.60 62-14583

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1956, v. 20 [no. 4] p. 475-486.

DESCRIPTORS: *Elasticity, Theory, Petroleum, Sources, Rock, Fracture (Mechanics).

A clarification is presented of the hypothesis of S. A. Christianovich (Akad. Nauk SSSR Otdel. Tekh. Nauk Izvestia 1955: no. 5 and 1955: no. 11) from (Mechanics, TT, v. 8, no. 9) (over)

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1. Title: Hydraulic fracturing
I. Barenblatt, G. I.

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Sci - Engineering

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Influence of Internal Pressure on the Critical Shear Stress for an Infinitely Long Cylindrical Shell, by L. A. Shapalov.
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Sci - Mathematics; Eng
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Asymptotic Integration of Equations of the Static Stability of a Conical Shell of Rotation, by N. A. Alumyaye.

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Approximate Integration of Equations of a Plane Problem of the Theory of Plasticity, by S. M. Belonosov. UNCLASSIFIED)

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ESTIMATES ON SOLUTIONS OF SYSTEMS OF DIFFERENTIAL EQUATIONS WHICH ARE EQUATIONS OF DISTURBED MOTION WITH VARIABLE COEFFICIENTS [1961] 7½p. 2 refs.
Order from OTS or SLA $1.10 61-16124

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1957, v. 21, no. 1, p. 119-120.

DESCRIPTORS: *Differential equations, Numerical analysis, *Motion, Stability, Equations.

(Mechanics, TT, v. 6, no. 2)

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Certain Variational Problems in the Gas Dynamics of Axisymmetric Supersonic Flow, by Yu. D. Shmyglevskiy, 18 pp.

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Axisymmetric Movements of a Friable Medium, by S. S. Grigoryan.
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On the Stability of a Panel Moving in a Gas, by A. A. Movchan, 23 pp.

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Sci - Phys, Mathe

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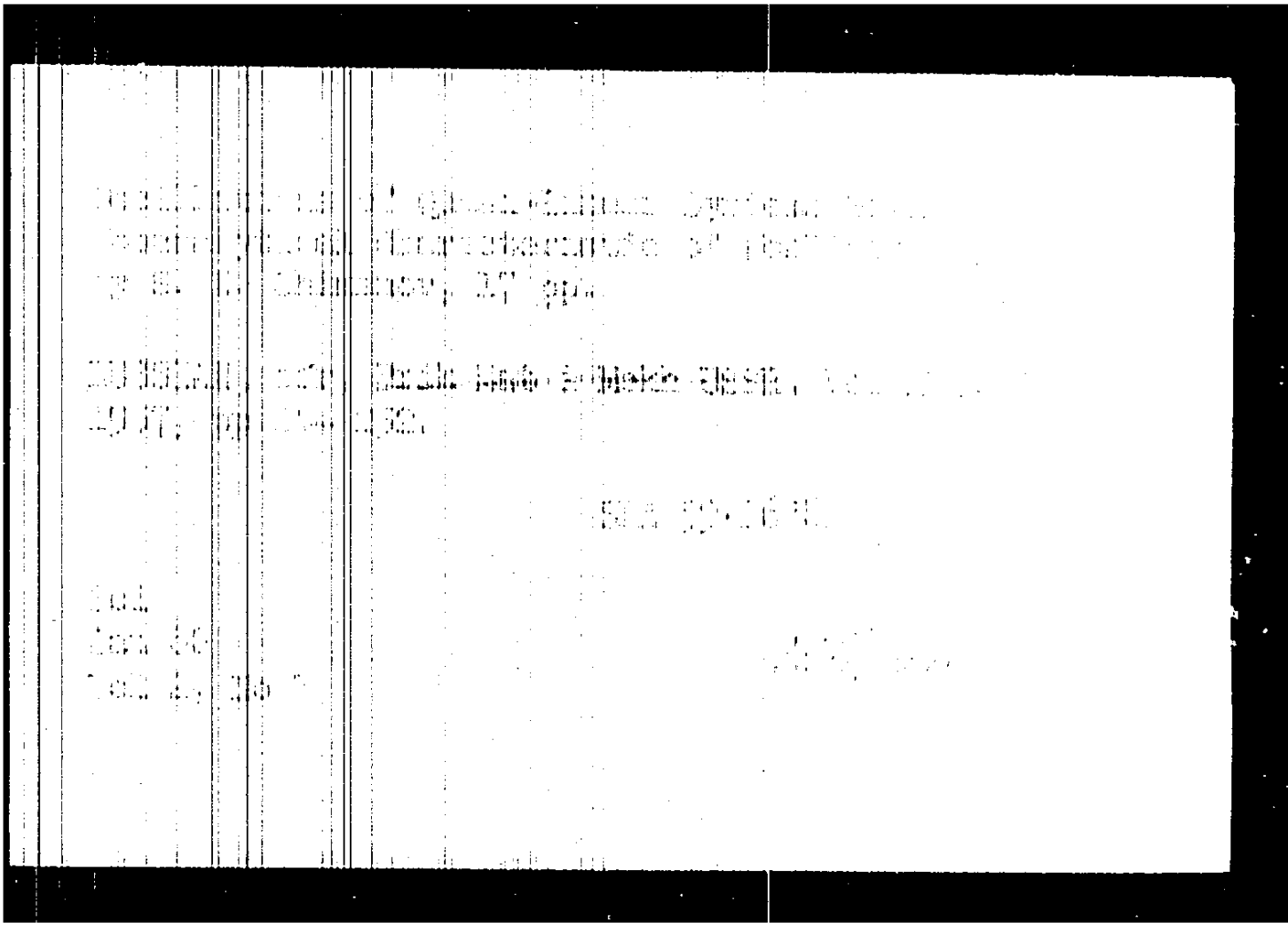

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On Stability with Large Initial Perturbations, by N. N. Krasovskiy, 14 pp.

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I. [illegible]yn, M. G.

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NRL M 5143

Calculation of Certain Sonic Flows of a Gas,
by P. I. Chushkin. UMCL

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Order from OTS or SLA $1.60 61-15786

Trans. in French of Prikl[adnaya] Mat[ematika i] Mekh[anika] (USSR) 1957, v. 21, no. 3, p. 353-360.

DESCRIPTORS: Bodies of revolution, *Gas flow, Numerical analysis, Differential equations, Velocity.

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I. Chushkin, P. I.
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Elasto-Plastic Equilibrium of a Wedge in a Plane Stress Condition, by L. M. Kachanov. UNCL

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Some Thermohydrodynamic Problems in Connection with the Steady Two-Dimensional Flow of a Viscous Trickling Liquid, by S. A. Regirer, 19 pp. UNCLASSIFIED

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Heat Convection in a Revolving Round Pipe With a Constant Temperature Gradient, by V. N. Golubenkov. UNCLASSIFIED

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Sci - Phys

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NTC 71-14360-01A

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On the Motion of a Container Partially Filled With a Liquid Taking Into Account Large Motions of the Latter, by G. S. Narimanov.

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Vorovich, I. I. and Yudovich, V. I.
[illegible] PRODUCED BY A ROUND DISC IN A LIQUID OF FINITE DEPTH. [1961] 11p. 3 refs.
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Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1957, v. 21, no. 4, p. 525-532.

AEC-SCL-T-65-201

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1. Liquids--Physical factors
2. [illegible]--Hydrodynamic [illegible]
I. Vorovich, I. I.
II. Yudovich, V. I.
III. RIS S-2110
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Boundary-Layer Equations and Their Boundary Conditions in the Case of Motion at Supersonic Velocities in a Moderately Rarefied Gas, by Yu. N. Lunkin, [illegible]

RUSSIAN, pub, Prik Matemat i Mekh, Vol XXI, 1957, pp 597-605.

Sci - Math

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The Stability (Based on Linear Approximation) of the Periodic Solution of the System of Differential Equations Having Discontinuous Right-Hand Sides, by M. A. Aizerman, F. R. Gantmakher.

RUSSIAN, per, Prik Matemat i Mekhan, Vol XXI, 1957, pp 658-669.

NAE 890

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Sci - Phy

Jan 61

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ONE OPTIMAL CONTROL PROBLEM. [1963] 12p.
9 refs.
Order from OTS or SLA $1.60 63-14455

Trans. of Prikl[adnaya] Matem[atika] i Mekhan[ika]
(USSR) 1957, v. 21, no. 5, p. 670-677.
Another trans. is available from LC or SLA mi$2.40,
ph$3.30 as 60-18806 [1960] 13p.

DESCRIPTORS: *Control systems, Mathematical analysis, *Difference equations, *Differential equations.

For abstract see Technical Translations 5: 147, 1961.

(Mathematics, TT, v. 10, no. 8)

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1. Krasovskii, N. N.

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Drakhlin, E. Kh.
THE SOLUTION OF THE EQUATIONS FOR A CASE OF STATIONARY HEAT CONVECTION IN AN INFINITE OBLIQUE CIRCULAR CYLINDER (Reshenie Uravnenii dlya Odnogo Sluchaya Statsionarnoi Teplovoi Konvektsii v Beskonechnom Naklonnom Krugovom Tsilindre). July 61 [5]p. 2 refs. RTS 1885.
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DESCRIPTORS: *Cylindrical bodies, Mathematical analysis, *Heat transfer, Convection, Thermal radiation.

In the problem of stationary heat convection in the centre section of a long oblique circular cylinder, contained in an infinite solid mass with a temperature gra- (over)

(Physics--Thermodynamics, TT, v. 6, no. 8)

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Sci - Mechanics
Mar 67

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Application of the Method of Small Disturbances to Problems of the Laminar Boundary Layer, by V. V. Lunev. UM 0L

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Sci - Math; Phys
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NASA TT F-22

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Sci - Physics
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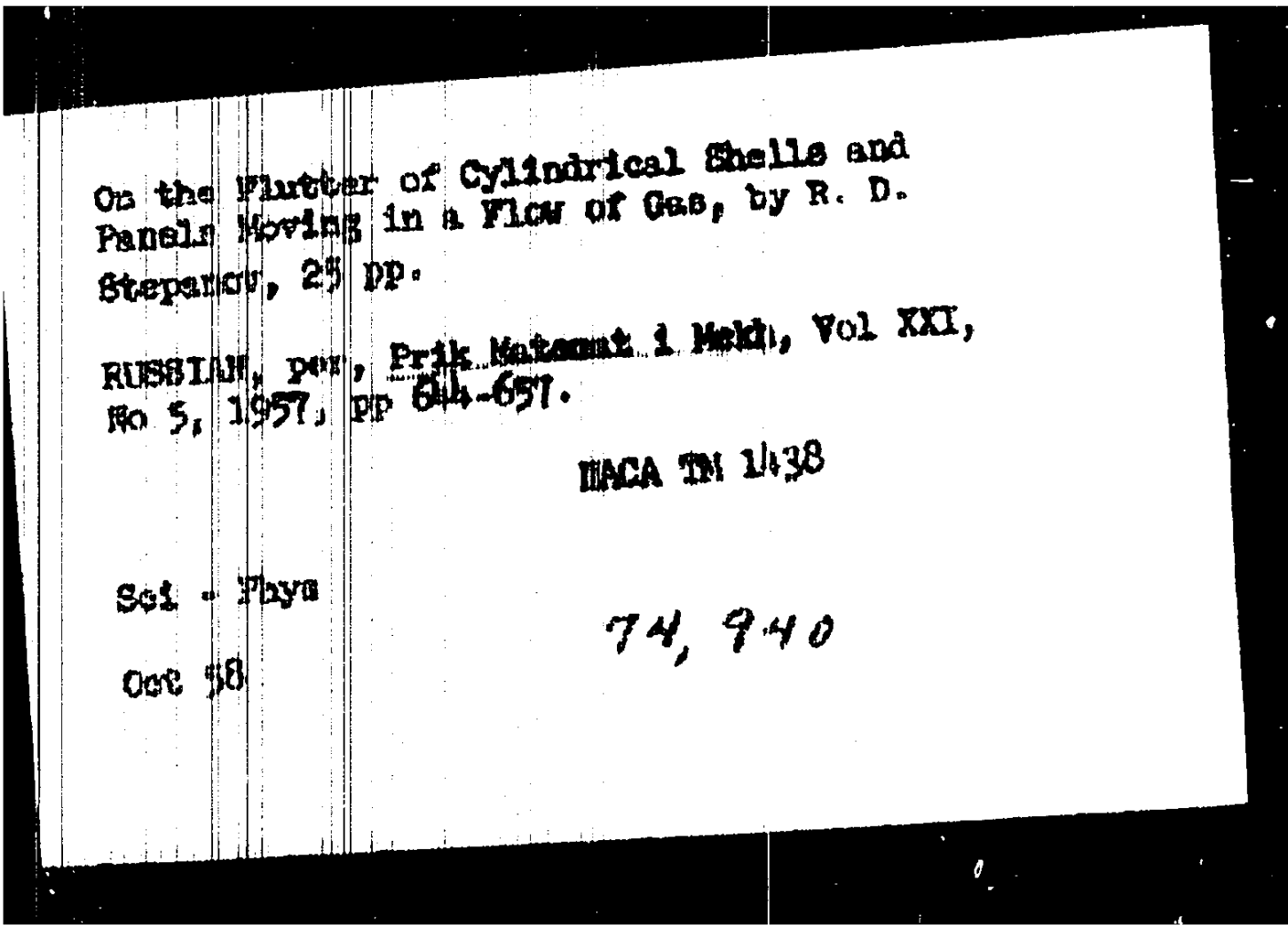

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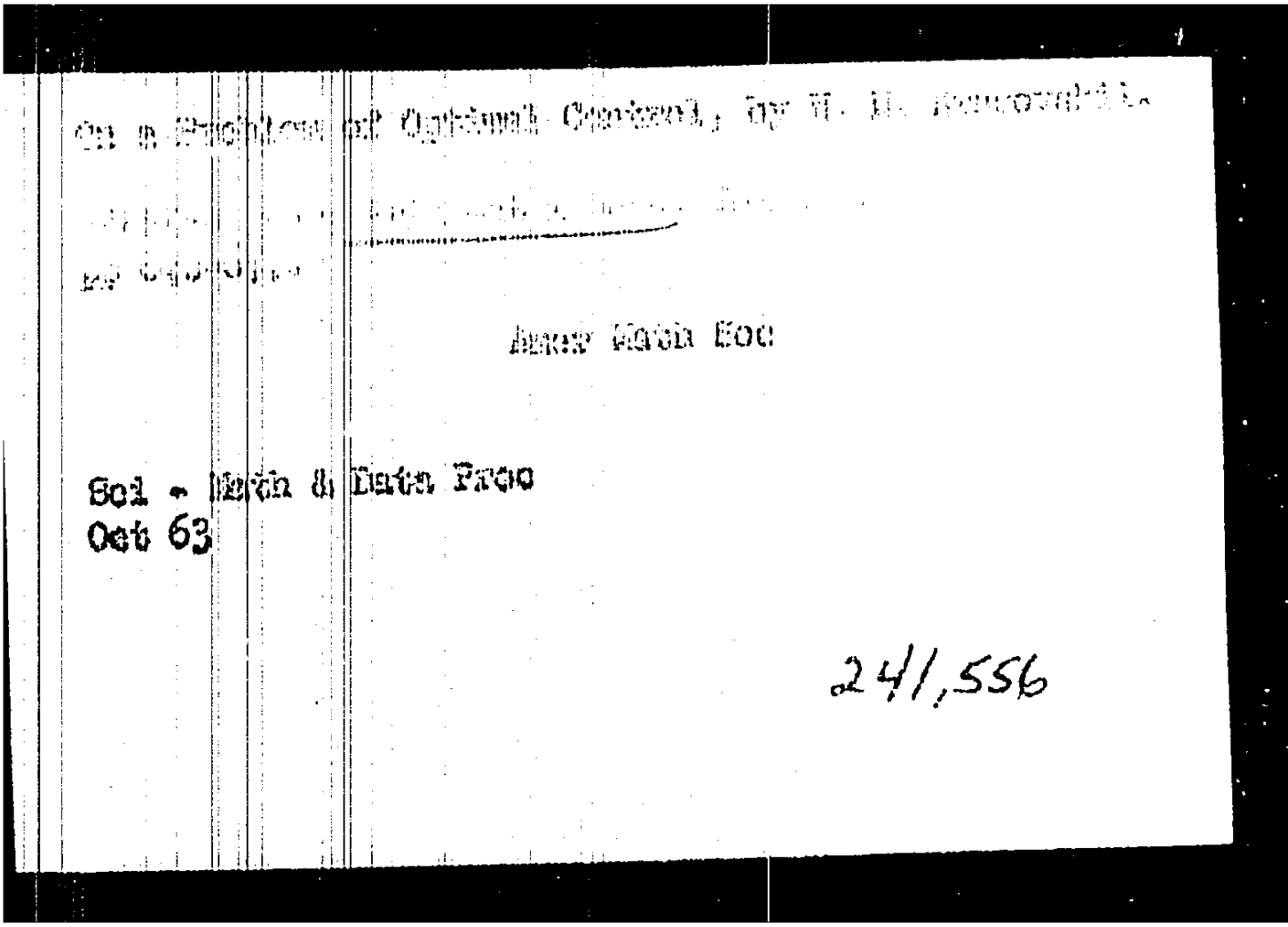

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An examination is presented of the system of finite difference equations

$$x_i([k+1]h) - x_i(kh) = [a_{i_1}x_1(kh) + \ldots + a_{i_n}x_n(kh) + q_{i_1}u_1(kh) + \ldots + q_{i_r}u_r(kh) + f_i(kh)]h,$$

where $(i = 1, \ldots, n)$, $(k = 0, 1, \ldots)$, and $(h > 0 = \text{const})$; $x_1, \ldots x_n$ are the coordinates of a point in the phase space of the system; $u_1, \ldots u_r$ are the control variables; $f_i(kh)$ are known functions; and a_{i_j}, q_{i_1} are constants. The solution is described and the passage to the limit in the corresponding problem for differential equations when $h \to 0$ is substantiated.

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