

51(05)-3

Reçu le 10 mai 1989

EXCLU DU PRÊT



Journal of

**APPLIED MATHEMATICS
AND MECHANICS**

Translation of the Soviet Journal

**ПРИКЛАДНАЯ МАТЕМАТИКА
И МЕХАНИКА**

(ПММ)

(English translation published May 1989)



Published by
PERGAMON PRESS, Oxford • New York
Beijing • Frankfurt • São Paulo • Sydney • Tokyo • Toronto

CONTENTS

A. YU. LEVCHENKOV: A problem of approach with two different pursuers and one evader	1
G. A. BESSONOV, V. I. KOROBOV and G. M. SKLYAR: The problem of the stable synthesis of bounded controls for a certain class of non-steady systems	5
V. A. UGRINOVSKII: Exponential stabilization of non-linear stochastic systems	11
L. V. DOKUCHAYEV: Stability of rotation of a deformable spacecraft	18
A. S. SUMBATOV: Some invariant relations in the problem of the motion of a body on a smooth horizontal plane	25
S. B. MALANOV and G. A. UTKIN: Shock interaction between a concentrated object and a one-dimensional elastic system	30
S. V. BOGATYREV and V. A. SOBOLEV: Separating the rapid and slow motions in the problems of the dynamics of systems of rigid bodies and gyroscopes	35
Z. S. BATALOVA and G. V. BELYAKOVA: Stability diagrams of the periodic motions of a pendulum with an oscillating axis	41
A. B. AIRAPETOV and E. M. ZHMULIN: On the axisymmetric screw motion of an incompressible viscous fluid	49
B. A. MALOMED and M. I. TRIBEL'SKII: On strong transitions between structures of differing symmetry accompanying weakly supercritical convection	53
S. N. TIMOSHIN: Elimination of edge rupture caused by the effect of flow pulsations	59
V. N. KRUTIN, M. G. MARKOV and A. YU. YUMATOV: Normal waves in a fluid-filled cylindrical cavity located in a saturated porous medium	63
I. S. ZORIN and YU. A. ROMASHEV: On the state of stress and strain of layered plates of non-symmetric construction	67
L. S. SRUBSHCHIK: Dynamic snap-through of an elastic shell subjected to a pulsed load	75
A. G. KULIKOVSKII and E. I. SVESHNIKOVA: Non-linear waves in slightly anisotropic elastic media	86
V. K. OPANASOVICH: Two approaches to the investigation of antiplane deformation of an isotropic solid with a thin elastic inclusion	90
A. A. EVTUSHENKO and YU. I. SOROKATYI: Extension of a composite plane with a thin elastic inclusion emerging orthogonally on a straight material interfacial line	94
V. I. KERCHMAN and F. M. ERLIKHMAN: A variational method of solving an elastic-plastic problem for a body with a circular hole	99
S. S. GRIGORYAN, S. V. DZHANASHIYA and G. V. RYKOV: A mathematical model of the deformation and failure of rock materials	105
B. E. POBEDRYA: Strength criteria of an anisotropic material	110
V. M. NAZARENKO: The spatial problem of the compression of a material along a periodic system of parallel circular cracks	113
V. B. ZELENTSOV: Asymptotic solutions of integral equations of crack theory problems for thin plates	120
A. N. GAIFUTDINOV and N. D. YAKIMOV: Comparison theorems for non-stationary pressure filtration problems	126
M. A. BRUTYAN and P. L. KRAPIVSKII: Hamiltonian formulation and fundamental conservation laws for a model of small elliptical vortices	130
G. A. LEONOV and A. V. MOROZOV: On the global stability of the forced motions of a liquid within an ellipsoid	133
L. A. FIL'SHTINSKII and L. A. KHIZHNYAK: Reaction of a piezoceramic shell to concentrated dynamical actions	136
D. G. PERADZE: On the paper by Kirichenko V. F., Krysko V. A. and Surova N. S.: The Bubnov-Galerkin method in the non-linear theory of hollow flexible, orthotropic multilayered shells	140

Indexed/abstracted in
Cambridge Sci. Abstr., INSPEC

ISSN 0021-8928



Published by
PERGAMON PRESS Oxford · New York
Beijing · Frankfurt · São Paulo · Sydney · Tokyo · Toronto