

NATIONAL
ACADEMY
OF SCIENCES
OF UKRAINE

PIDSTRYHACH
INSTITUTE OF
APPLIED PROBLEMS
OF MECHANICS AND
MATHEMATICS

MATHEMATICAL METHODS and PHYSICOMECHANICAL FIELDS

SCIENTIFIC JOURNAL

FOUNDED IN 1975

Vol. 52, No. 4

L'viv 2009

CONTENTS

<i>Kalenyuk P. I., Kohut I. V., Nytrebych Z. M.</i> Investigation of problem with homogeneous local two-point conditions for a homogeneous system of partial differential equations	7
<i>Savka I. Ya.</i> Nonlocal boundary-value problem for partial differential equations with constant coefficients belonging to smooth curves	18
<i>Pukalsky I. D.</i> Parabolic boundary-value problem and optimal control problem .	34
<i>Buhrii O. M., Glynyans'ka K. P.</i> Some parabolic variational inequalities with variable degree of nonlinearity: unique solvability and comparison theorems	42
<i>Pyrch N. M.</i> Free paratopological groups and free products of paratopological groups	58
<i>Shchedryk V. P.</i> Transforming matrices and divisors generated by them	64
<i>Baran O. Ye.</i> The twin circular domains of convergence for branched continued fractions with unequivalent variables	73
<i>Bocenyuk A. M.</i> On time decay estimates of solutions of one equation of magnetic field in nonlinear unbounded medium	81
<i>Chaban F. V., Shynkarenko G. A.</i> A posteriori error estimators of finite element approximations for forced harmonic vibrations problem of piezoelectrics .	88
<i>Król M.</i> Exponential stability of evolution differential Ito-type equations of the first and second order	99

<i>Grigorenko A. Ya., Puzyriov S. V., Prigoda A. P., Khorishko V. V.</i> Theoretical-experimental investigation of free vibrations' frequencies of circular cylindrical shells	108
<i>Kurpa L. V., Mazur O. S.</i> <i>R</i> -functions method for investigation of parametric vibrations of orthotropic complex form plates	120
<i>Kochurov R. Ye., Avramov K. V.</i> Parametric vibrations of cylindrical shells in the region of combinative resonances at geometrically nonlinear deformation	130
<i>Loza I. A.</i> Free vibrations of piezoceramic hollow cylinders with radial polarization	138
<i>Matus V. V.</i> Modified null field method in problem on scattering SH-waves by partially debonded elastic inclusion with piecewise smooth counter	145
<i>Kit H. S., Sushko O. P.</i> Stationary heat conduction and thermoelasticity problems for a body with heat-permeable disc inclusion (crack)	150
<i>Shevchenko V. P., Zakora S. V.</i> On interaction of close located circular holes with rigid contours in a spherical shell	160
<i>Nykolyshyn T. M., Rostun M. Yo.</i> Stress state and limit equilibrium of thickness-inhomogeneous spherical shell with two surface cracks	166
<i>Bogdanov V. L.</i> Non-axisymmetric problem on stress-strain state of elastic half-space containing near-surface circular crack under load directed along the crack	173
<i>Skalsky V. R., Okrepky Yu. S., Matviiv Yu. Ya.</i> Evaluation of stress concentration in elastic matrix near arbitrary oriented inclusions with less rigidity	191
<i>Khapko B. S., Chyzh A. I.</i> Thermal bending of a strip and rectangular plate with heat exchange coefficients dependent on coordinate	198
<i>Maksymovych O. V., Solyar T. Ya.</i> Method of mechanical quadratures for solving thermoelasticity integral equations for plates with heat emission	207
<i>Bondarenko N. S., Goltsev A. S.</i> Solution of heat conduction problem for anisotropic plates at concentrated thermal loading with using Legendre polynomials	216
<i>Yankovskii A. P.</i> Identification of structures of reinforcement of thin-slab composite structures on the basis of experimental data about stationary distribution of temperature	227
NEW ITEMS AND INFORMATION	
<i>To the 60-th birth anniversary of Volodymyr Oleksandrovych Pelykh</i>	236
ALPHABETICAL INDEX FOR 2009 (vol. 52)	238