

YOUNG SCIENTISTS SESSION “MODERN WAYS IN MECHANICS (MWM) - 2009”

1. **A. V. Abdrashitov, S. G. Psakhie, K. P. Zolnikov.** Spherical and cylindrical charged dusty particle system response on pulse loading.
2. **V. A. Eremeyev, A. K. Aizinbud.** On the motion of flexible slender particle in the shear flow.
3. **M. Antimonov, A. Cherkaev.** Optimal 3D elastic structures under strain loading.
4. **N. A. Antipina, E. L. Tarunin .** The influence of the vortex tube parameters on the effect of temperature separation.
5. **K. Aristovich, O. Antonova, S. Khan, A. Borovkov.** Fast-processing modelling technology in application to the complex realistic biomechanical problems.
6. **A. R. Arutyunyan, B. A. Zimin, Yu. V. Sud’enkov.** Evolution of scale levels of the materials structure rearrangements during cycle loadings.
7. **S. V. Astafurov, E. V. Shilko, V. L. Popov, S. G. Psakhie.** The possibility of diagnosing imperfection of nano-sized ceramic coatings on the base of tribospectral analysis.
8. **I. E. Berinskiy, A. M. Krivtsov.** Describing of mechanical properties of graphene based on different mathematical models.
9. **A. S. Bodrova, N. V. Brilliantov.** A model of ballistic aggregation and fragmentation.
10. **N. Bukrina, A. G. Knyazeva.** Influence of processing conditions on the phase composition and the chemical properties.
11. **Y. Chen, M. Cartmell.** Hybrid Sliding Mode Control for Motorised Space Tether Spin-up when Coupled with Axial Oscillation.
12. **M. S. Doroshenko.** Computer modelling of porous silicon formation.
13. **N. Evstigneev, A. Knyazeva.** Spreading of a solid-phase chemical reaction in a plate subjected to mechanical loading.
14. **R. A. Filippov, E. N. Vilchevskaya, A. B. Freidin.** On formation of transition layers in nanocomposite materials as new phase domains.
15. **A. I. Gakashev.** Influence of hole on convection in beehives.
16. **C. C. Gandara, M. P. Cartmell.** De-Spin of a Motorised Momentum Exchange Tether.
17. **K. N. Gavrilova.** Hydraulic jump in an inclined channels.
18. **N. M. Yakupov, R. R. Giniyatullin.** Research of mechanical characteristics of the thin-walled elements subject to corrosion deterioration at influence of physical fields.
19. **A. A. Girchenko, V. A. Eremeyev.** Modeling of nanocoils made of multilayered films.
20. **E. Gridasova.** Calculation of thermal stresses in composit material on base glass and metal.
21. **L. Iannantuoni, G. Manzini.** A unified graphic environment dedicated to SES code for optimization of fire ventilation strategies in subway networks.
22. **I. I. Blekhman, K. S. Ivanov.** A new case of vibrational translation in a Chelomey pendulum-like system..
23. **P. Kedzia.** Longitudinal permeability of porous fibrous medium for the power-law fluid flow.
24. **O. Khvostova, E. Averbukh, A. Kurkin, C. Kharif.** Non seismic tsunami scenarios investigation for the French coast of the Mediterranean.
25. **E. Zubova, M. Mazo, A. Savin, I. Kikot, N. Kovaleva, E. Gusarova, L. Manevitch, A. Onufriev.** DNA intramolecular mobility as a basis for new coarse-grained model constructing.
26. **P. Kołat, B. Maruszewski.** Longitudinal strain solitary waves in an auxetic rod.
27. **Ig. S. Konovalenko, A. Y. Smolin.** Multilevel approach in description of deformation and fracture of brittle porous materials on the basis of movable cellular automaton method.
28. **A. Y. Smolin, S. A. Dobrinin, Ig. S. Konovalenko.** Peculiarities detemining generation of elastic waves in friction. Computer simulation using discrete-continual approach.
29. **Iv. S. Konovalenko, K. P. Zolnikov, S. G. Psakhie.** Influence of structural defects on properties of non-closed nanostructures.

30. **I. K. Korolev, S. V. Petinov, A. B. Freidin.** FEM simulation of fatigue damage, crack nucleation and growth in a pre-damaged material
31. **N. N. Smirnov, V. F. Nikitin, N. V. Korolkova.** Modelling of mixing gases in supersonic flows.
32. **S. A. Kostyrko, M. A. Grekov.** Stress and Stability Analysis of a Thin Film Surface Subjected to High Temperature.
33. **N. Kozlov.** Influence of viscosity of the liquid on the vibrational hydrodynamic top.
34. **G. Krokhaleva.** Dynamics of the Tippe Top.
35. **D. S. Kryzhevich.** Simulation of local structural changes formation in FCC materials under dynamic loading.
36. **I. Kudinov, N. Evseev.** Role of viscosity in continuum mechanics approach to describe flow through porous media.
37. **A. Kuksin, G. Norman, V. Stegailov, A. Yanilkin.** Plasticity of Al and Al-Cu alloys under dynamic loading: atomistic simulation.
38. **S. V. Kuzmichev, S. A. Kukushkin, A. V. Osipov.** Formation of micropores in uniformly stressed optical fibres subject to an intense ultraviolet irradiation..
39. **O. N. Kashinsky, A. S. Kurdyumov, P. D. Lobanov.** Hydrodynamical characteristics of the stationary 'single cell' of the slug flow.
40. **A. O. Malkhanov, V. I. Erofejev.** Nonlinear magneto-elastic waves in rods.
41. **E. Alim ogli Mamedov.** On the quasi-periodic perturbations of Duffing - Van-der-Pol equation.
42. **D. H. Mheryan, M. V. Belubekyan.** Three dimensional surface waves in transversely isotropic medium.
43. **I. Morozov.** Atomic force microscopy of the structure of filled rubber compounds.
44. **A. D. Nemtsev, V. G. Tsybulin.** Computer experiment on convection of multicomponent fluid in a porous medium.
45. **I. Neygebauer.** Elastic properties of face-centered-cubic (FCC) lattice.
46. **V. E. Odintsova.** The stability and instability of heat pipes.
47. **A. I. Oleinikov, K. S. Bormotin.** Development and application the steady creep theory for transversely isotropic material with the different properties at a tension, compression and shear.
48. **M. A. Papaev.** About stability of stochastic systems with final DOF.
49. **N. A. Parfenov, K. P. Zolnikov.** Propagation peculiarities of spherically converging waves in materials under uniform impact loading.
50. **A. G. Pelevin, A. L. Svistkov, A. A. Adamov.** Viscoelastic model of rubber compound and algorithm of definition of material constants using experimental data under complex cyclic loadings, including stress relaxation and creep.
51. **A. Kuksin, G. Norman, V. Pisarev, V. Stegailov, A. Yanilkin.** Kinetic model and microscopic theory of fracture of liquids based on atomistic simulation.
52. **E. Podolskaya.** Modeling and design of mechanical properties and structure of HCP lattice using pair potentials.
53. **E. V. Polyakova, V. A. Lutov, V. A. Chaikin.** Axially symmetric problem of interaction between a soft orthotropic shell and a rigid body enveloped by the shell.
54. **V. M. Bogomol'nyi, S. N. Rodivilov.** The temperature autocoupling effect in multilayer cylinder shells.
55. **I. P. Ryndin, B. E. Melnikov, A. S. Semenov.** Advanced plasticity models emphasizing on ratcheting.
56. **L. Salles, A. M. Gouskov, L. Blanc, F. Thouverez.** Vibration of bladed disk with friction and fretting-wear in blade attachments.
57. **A. N. Salnikova, N. Kozlov.** Vibrational dynamics of immiscible liquids in a rotating horizontal cylinder.
58. **T. Sapsis, G. Haller.** Local instabilities along invariant manifolds, with applications to mechanics, fluids, and biology.
59. **V. G. Kozlov, V. D. Schipitsyn.** Hydrodynamic interaction of a cylindrical solid with a boundary of a cavity subjected to vibration.

60. **E. Selivanova**. Computer modelling for initiation and synchronization processes of oscillation of ciliated cells cilia.
61. **N. M. Yakupov, R. I. Shafigullin**. Experimental installation for research of thin-walled elements in the mixed liquid environment.
62. **L. I. Manevitch, D. S. Shepelev, A. S. Kovalyova**. Non-stationary vibrations of nonlinear oscillator under random excitation.
63. **M. N. Smirnova, A. V. Zvyaguin**. Resistance and lift forces in thin body motion in compressible fluid parallel to free surface.
64. **A. Sokolov**. Modeling of the mechanical behavior for blood vessels.
65. **J. O. Soliaev, S. A. Lurie**. Applied model of adhesion properties of continuous media and its applications to filled composites.
66. **V. S. Sorokin**. Dynamic properties of nonlinear system with oscillating pendulum.
67. **V. S. Sorokin, I. I. Blekhman**. Motion of a body with variable volume (a gas bubble) in oscillating fluid.
68. **S. N. Sorokova, A. G. Knyazeva**. Influence of volumetric changes on synthesis in the solid phase.
69. **S. V. Starikov**. Mechanical properties of carbon nanotubes calculated by molecular dynamic method..
70. **A. V. Tyan, A. G. Knyazeva**. Numerical simulation of surface treatment of alloys by a pulse electron beam under non-equilibrium activation and internal stresses.
71. **V. A. Arkhipov, V. F. Trofimov, A. S. Usanina**. Regimes of drops and bubbles deformation in two-phase flows.
72. **R. A. Arutyunyan, A. V. Vardanyan**. The thermodynamic formulation of creep fracture criterion for aging elastic-viscous media.
73. **A. A. Vjatkin, A. A. Ivanova**. Thermal convection in rotating horizontal annulus.
74. **S. N. Yakupov**. Research of mechanical characteristics of flat and nonplanar films and membranes with difficult structure.
75. **A. Kuksin, G. Norman, A. Yanilkin, P. Zhilyaev**. Molecular dynamics simulation of dislocation nucleation in aluminum.
76. **K. S. Yurkevich, S. M. Bosiakov**. Development the modelling of orthodontic appliances and calculation mode of deformation.
77. **A. Kuksin, G. Norman, V. Stegailov, A. Yanilkin, P. Zhilyaev**. Molecular dynamics study of the influence of temperature on spall strength of solid Al.