

LISTĂ DE LUCRĂRI

Ionel-Dumitrel GHIBA

A. Teza de abilitare:

- *Mathematical Methods and Models in classical and generalised Elasticity*, susținută public în data de 14 Decembrie 2022 la Facultatea de Matematică a Universității Alexandru Ioan Cuza din Iași.

B. Teza de doctorat:

- *Studiul unor modele generalizate în mecanica mediilor continue*, susținută public în data de 14 Octombrie 2010 la Facultatea de Matematică a Universității Alexandru Ioan Cuza din Iași.

C. Lista a 10 lucrări considerate semnificative

- LS1. M.M. Saem, **I.D. Ghiba**, P. Neff, P. A **Geometrically Nonlinear Cosserat (Micropolar) Curvy Shell Model Via Gamma Convergence**, *Journal of Nonlinear Science*, 33 (5): Article Number 70, 2023.
- LS2. J. Voss, R.J. Martin, **I.D. Ghiba**, P. Neff, **Morrey's Conjecture for the Planar Volumetric-Isochoric Split: Least Rank-One Convex Energy Functions**, *Journal of Nonlinear Science* 32 (5), Article Number 76, DOI10.1007/s00332-022-09827-4, 2022.
- LS3. J. Voss, **I.D. Ghiba**, R.J. Martin, P. Neff. **A rank-one convex, non-polyconvex isotropic function on $GL^+(2)$ with compact connected sublevel sets**, *Proceedings A of the Royal Society of Edinburgh*, 152: 356-381 2022.
- LS4. **I.D. Ghiba**, M. Birsan, P. Lewintan, P. Neff. **The isotropic Cosserat shell model including terms up to $\mathcal{O}(h^5)$. Part I: Derivation in matrix notation**, *Journal of Elasticity*, 142: 201–262, 2020.
- LS5. R.J. Martin, J. Voss, **I.D. Ghiba**, O. Sander, P. Neff, **The quasiconvex envelope of conformally invariant planar energy functions in isotropic hyperelasticity**, *Journal of Nonlinear Science*, 30: 2885–2923, 2020.
- LS6. R.J. Martin, J. Voss, **I.D. Ghiba**, P. Neff, **Quasiconvex relaxation of isotropic functions in incompressible planar hyperelasticity**, *Proceedings of the Royal Society of Edinburgh, Section: A Mathematics*, 150: 2620 – 2631, 2020.
- LS7. **I.D. Ghiba**, R.J. Martin, P. Neff. **Rank-one convexity implies polyconvexity in isotropic planar incompressible elasticity**, *Journal de Mathematiques Pures et Appliques*, 116, 88-104, 2018.

- LS8. R.J. Martin, **I.D. Ghiba**, P. Neff. **Rank-one convexity implies polyconvexity for isotropic, objective and isochoric elastic energies in the two-dimensional case**, *Proceedings of the Royal Society of Edinburgh, Section: A Mathematics* 147 (3), pp. 571-597, 2017.
- LS9. **I.D. Ghiba**, P. Neff, R.J. Martin. **An ellipticity domain for the distortional Hencky-logarithmic strain energy**, *Proceedings of the Royal Society A* 471, doi: 10.1098/rspa.2015.0510, 2016.
- LS10. P. Neff, **I.D. Ghiba**, A. Madeo, L. Placidi, G. Rosi. **A unifying perspective: the relaxed linear micromorphic continuum**, *Continuum Mechanics and Thermodynamics*, 26, pp. 639-681, 2014.

D. **Cărți de specialitate publicate** în edituri recunoscute, prin care se aduc contribuții la dezvoltarea activității profesionale:

Capitole în cărți/enciclopedii:

- D1.A. Madeo, P. Neff, G. Barbagallo, M.V. D'Agostino, **I.D. Ghiba**. **A review on wave propagation modeling in band-gap metamaterials via enriched continuum models**, In F. dell'Isola, M. Sofonea and D. Steigmann (eds), *Mathematical Modelling in Solid Mechanics*, Volume 69 of the series Advanced Structured Materials, pp. 89-105, Springer, 2017.
- D2.P. Neff, **I.D. Ghiba**. **Comparison of isotropic elasto-plastic models for the plastic metric tensor $\mathbf{C}_p = \mathbf{F}_p^T \mathbf{T} \mathbf{F}_p$** , In K. Weinberg and A. Pandol (eds), *Innovative Numerical Approaches for Multi-Field and Multi-Scale Problems*, Volume 81 of Lecture Notes in Applied and Computational Mechanics, pp. 161-195, Springer, 2016.
- D3.**I.D. Ghiba**. **Linear Thermoelastic Model**. In R. Hetnarski (ed.), *Encyclopedia of Thermal Stresses*, pp. 2785-2794, Springer, 2014.
- D4.**I.D. Ghiba**. **Boundary-Initial Value Problems of Thermoelastodynamics**. In R. Hetnarski (ed.), *Encyclopedia of Thermal Stresses*, pp. 468-474, Springer, 2014.
- D5.**I.D. Ghiba**. **Partition of Energy**. In R. Hetnarski (ed.), *Encyclopedia of Thermal Stresses*, pp. 3609-3616, Springer, 2014.
- D6.**I.D. Ghiba**. **Saint-Venant's Principle**. In R. Hetnarski (ed.), *Encyclopedia of Thermal Stresses*, pp. 4255-4264, Springer, 2014.
- D7.**I.D. Ghiba**. **Thermoelastic Waves**. In R. Hetnarski (ed.), *Encyclopedia of Thermal Stresses*, pp. 5785-5794, Springer, 2014.

Volume editate:

E1.O. Cârjă, **I.D. Ghiba**. **Proceedings of the International Student Conference on Pure and Applied Mathematics**, Editura Universității “Alexandru Ioan Cuza”, 2011, ISBN 978-973-703-602-5.

E. **Articole/studii** publicate în reviste de specialitate de circulație internațională recunoscute sau în reviste de specialitate de circulație națională, recunoscute de CNCSIS:

Articole în jurnale indexate ISI:

- L1. M.M. Saem, **I.D. Ghiba**, P. Neff, P. A **Geometrically Nonlinear Cosserat (Micropolar) Curvy Shell Model Via Gamma Convergence**, *Journal of Nonlinear Science*, 33 (5): Article Number 70, 2023.
- L2. **I.D. Ghiba**, P. Neff, **Linear constrained Cosserat-shell models including terms up to $O(h^5)$: conditional and unconditional existence and uniqueness**, *Zeitschrift für Angewandte Mathematik und Physik*, 74: Article Number 4, 2023.
- L3. **I.D. Ghiba**, G. Rizzi, A. Madeo, P. Neff, **Cosserat Micropolar Elasticity: Classical Eringen vs. Dislocation Form**, *Journal of Mechanics of Materials and Structures*, 18 (1): 93-123, 2023.
- L4. G. Rizzi, G. Hutter, H. Khan, **I.D. Ghiba**, A. Madeo, P. Neff, **Analytical solution of the uniaxial extension problem for the relaxed micromorphic continuum and other generalized continua (including full derivations)**, *Archive of Applied Mechanics*, 93 (1): 5-21, 2023.
- L5. J. Voss, R.J. Martin, **I.D. Ghiba**, P. Neff, **Morrey's Conjecture for the Planar Volumetric-Isochoric Split: Least Rank-One Convex Energy Functions**, *Journal of Nonlinear Science* 32 (5), Article Number 76, DOI10.1007/s00332-022-09827-4, 2022.
- L6. J. Voss, **I.D. Ghiba**, R.J. Martin, P. Neff. **A rank-one convex, non-polyconvex isotropic function on $GL^+(2)$ with compact connected sublevel sets**, *Proceedings A of the Royal Society of Edinburgh*, 152: 356-381 2022.
- L7. H. Khan, **I.D. Ghiba**, A. Madeo, P. Neff. **Existence and uniqueness of Rayleigh waves in isotropic elastic Cosserat materials and algorithmic aspects**, *Wave Motion*, 110: 102898, 2022.
- L8. G. Rizzi, G. Hutter, H. Khan, **I.D. Ghiba**, A. Madeo, P. Neff, **Analytical solution of the cylindrical torsion problem for the relaxed micromorphic continuum and other generalized continua (including full derivations)**, *Mathematics and Mechanics of Solids*, 27: 507-553, 2022.

- L9. **I.D. Ghiba**, M. Birsan, P. Lewintan, P. Neff, **A Constrained Cosserat Shell Model up to Order $\mathcal{O}(h^5)$.: Modelling, Existence of Minimizers, Relations to Classical Shell Models and Scaling Invariance of the Bending Tensor**, *Journal of Elasticity*, 146: 83–141, 2021.
- L10. **I.D. Ghiba**, P. Neff, S. Owczarek. **A note on local higher regularity in the dynamic linear relaxed micromorphic model**, *Math. Meth. Appl. Sci.*, 44:13855-13865, 2021.
- L11. J. Voss, **I.D. Ghiba**, R.J. Martin, P. Neff. **Sharp rank-one convexity conditions in planar isotropic elasticity for the additive volumetric-isochoric split**, *Journal of Elasticity*, 143: 301-335, 2021.
- L12. **I.D. Ghiba**, P. Neff and S. Owczarek. **Existence results for non-homogeneous boundary conditions in the relaxed micromorphic model**, *Math. Meth. Appl. Sci.*, 44: 2040-2049, 2021.
- L13. **I.D. Ghiba**, M. Birsan, P. Lewintan, P. Neff. **The isotropic Cosserat shell model including terms up to $\mathcal{O}(h^5)$. Part II: Existence of minimizers**, *Journal of Elasticity*, 142: 263–290, 2020.
- L14. **I.D. Ghiba**, M. Birsan, P. Lewintan, P. Neff. **The isotropic Cosserat shell model including terms up to $\mathcal{O}(h^5)$. Part I: Derivation in matrix notation**, *Journal of Elasticity*, 142: 201–262, 2020.
- L15. R.J. Martin, J. Voss, **I.D. Ghiba**, O. Sander, P. Neff, **The quasiconvex envelope of conformally invariant planar energy functions in isotropic hyperelasticity**, *Journal of Nonlinear Science*, 30: 2885–2923, 2020.
- L16. M.V. d'Agostino, G. Barbagallo, **I.D. Ghiba**, B. Eidel, P. Neff, A. Madeo, **Effective description of anisotropic wave dispersion in mechanical band-gap metamaterials via the relaxed micromorphic model**, *Journal of Elasticity*, 139: 299–329, 2020.
- L17. R.J. Martin, J. Voss, **I.D. Ghiba**, P. Neff, **Quasiconvex relaxation of isotropic functions in incompressible planar hyperelasticity**, *Proceedings of the Royal Society of Edinburgh, Section: A Mathematics*, 150: 2620 – 2631, 2020.
- L18. M. Birsan, **I.D. Ghiba**, R.J. Martin, P. Neff, **Refined dimensional reduction for isotropic elastic Cosserat shells with initial curvature**, *Mathematics and Mechanics of Solids*, 24: 4000-4019, 2019.
- L19. S. Owczarek, **I.D. Ghiba**, M.V. d'Agostino, P. Neff, **Nonstandard micro-inertia terms in the relaxed micromorphic model: well-posedness for dynamics**, *Mathematics and Mechanics of Solids*, 24: 3200-3215, 2019.
- L20. R.J. Martin, **I.D. Ghiba**, P. Neff, **A polyconvex extension of the logarithmic Hencky strain energy**, *Analysis and Applications*, 17: 349-361, 2019.

- L21. **I.D. Ghiba**, R.J. Martin, P. Neff. **Rank-one convexity implies polyconvexity in isotropic planar incompressible elasticity**, *Journal de Mathematiques Pures et Appliques*, 116, 88-104, 2018.
- L22. R.J. Martin, **I.D. Ghiba**, P. Neff, **A non-ellipticity result, or the impossible taming of the logarithmic strain measure**, *International Journal of Non-Linear Mechanics*, 102, 147-158, 2018.
- L23. R.J. Martin, **I.D. Ghiba**, P. Neff. **Rank-one convexity implies polyconvexity for isotropic, objective and isochoric elastic energies in the two-dimensional case**, *Proceedings of the Royal Society of Edinburgh, Section: A Mathematics* 147 (3), pp. 571-597, 2017.
- L24. G. Barbagallo, M.V. D'Agostino, R. Abreu, **I.D. Ghiba**, A. Madeo, P. Neff. **Transparent anisotropy for the relaxed micromorphic model: macroscopic consistency conditions and long wave length asymptotics**, *International Journal of Solids and Structures*, 120, pp. 7-30, 2017.
- L25. **I.D. Ghiba**, P. Neff, A. Madeo, I. Münch. **A variant of the linear isotropic indeterminate couple stress model with symmetric local force-stress, symmetric nonlocal force-stress, symmetric couple-stresses and complete traction boundary conditions**, *Mathematics and Mechanics of Solids* 22, pp. 1221-1266, 2017.
- L26. I. Münch, P. Neff, A. Madeo, **I.D. Ghiba**. **The modified indeterminate couple stress model: Why Yang et al.'s arguments motivating a symmetric couple stress tensor contain a gap and why the couple stress tensor may be chosen symmetric nevertheless**, *ZAMM*, 97, pp. 1524-1554, 2017.
- L27. M. V. d'Agostino, G. Barbagallo, **I.D. Ghiba**, A. Madeo, P. Neff. **A panorama of dispersion curves for the weighted isotropic relaxed micromorphic model**, *ZAMM*, 97, pp. 1436-1481, 2017.
- L28. P. Neff, A. Madeo, G. Barbagallo, M.V. D'Agostino, R. Abreu, **I.D. Ghiba**. **Real wave propagation in the isotropic-relaxed micromorphic model**, *Proceedings of the Royal Society A* 473, doi: 10.1098/rspa.2016.0790, 2017.
- L29. A. Madeo, P. Neff, **I.D. Ghiba**, G. Rosi. **Reflection and transmission of elastic waves at interfaces embedded in non-local band-gap metamaterials: a comprehensive study via the relaxed micromorphic model**, *Journal of the Mechanics and Physics of Solids*, 95, pp. 441-479, 2016.
- L30. A. Madeo, **I.D. Ghiba**, P. Neff, I. Münch. **A new view on boundary conditions in the Grioli-Koiter-Mindlin-Toupin indeterminate couple stress model**, *European Journal of Mechanics A/Solids*, 59, pp. 294-322, 2016.

- L31. P. Neff, I. Münch, **I.D. Ghiba**, A. Madeo. **On some fundamental misunderstandings in the indeterminate couple stress model. A comment on recent papers of A.R. Hadjesfandiari and G.F. Dargush**, *International Journal of Solids and Structures* 81, pp. 233-243, 2016.
- L32. P. Neff, **I.D. Ghiba**. **Loss of ellipticity in additive logarithmic finite strain plasticity**, *International Journal of Non-Linear Mechanics*, 81, pp. 122-128, 2016.
- L33. P. Neff, **I.D. Ghiba**. **The exponentiated Hencky-logarithmic strain energy. Part III: Coupling with idealized multiplicative isotropic finite strain plasticity**, *Continuum Mechanics and Thermodynamics*, 28, pp. 477-487, 2016.
- L34. **I.D. Ghiba**, P. Neff, R.J. Martin. **An ellipticity domain for the distortional Hencky-logarithmic strain energy**, *Proceedings of the Royal Society A* 471, doi: 10.1098/rspa.2015.0510, 2016.
- L35. **I.D. Ghiba**, P. Neff, M. Silhavy. **The exponentiated Hencky-logarithmic strain energy. Improvement of the proof of planar polyconvexity**, *International Journal of Non-Linear Mechanics*, 71, pp. 48-51, 2015.
- L36. P. Neff, J. Lankeit, **I.D. Ghiba**, R. Martin, D. Steigmann. **The exponentiated Hencky-logarithmic strain energy. Part II: Coercivity, planar polyconvexity and existence of minimizers**, *ZAMP*, 66, pp. 1671-1693, 2015.
- L37. P. Neff, **I.D. Ghiba**, J. Lankeit. **The exponentiated Hencky-logarithmic strain energy. Part I: Constitutive issues and rank-one convexity**, *Journal of Elasticity*, 121, pp. 143-234, 2015.
- L38. A. Madeo, P. Neff, **I.D. Ghiba**, L. Placidi, G. Rosi. **Band gaps in the relaxed linear micromorphic continuum**, *ZAMM*, 95, pp. 880-887, 2015.
- L39. **I.D. Ghiba**, P. Neff, A. Madeo, L. Placidi, G. Rosi. **The relaxed linear micromorphic continuum: existence, uniqueness and continuous dependence in dynamics**, *Mathematics and Mechanics of Solids*, 68, pp. 53-84, 2015.
- L40. A. Madeo, P. Neff, **I.D. Ghiba**, L. Placidi, G. Rosi. **Wave propagation in relaxed micromorphic continua: modelling metamaterials with frequency band-gaps**, *Continuum Mechanics and Thermodynamics*, 27, pp. 551-570, 2015.
- L41. P. Neff, **I.D. Ghiba**, M. Lazar, A. Madeo. **The relaxed linear micromorphic continuum: well-posedness of the static problem and relations to the gauge theory of dislocations**, *Quarterly Journal of Mechanics and Applied Mathematics*, 68 (1), pp. 53-84, 2015.
- L42. **I.D. Ghiba**, E. Bulgariu. **On spatial evolution of the solution of a non-standard problem in the bending theory of elastic plates**, *IMA Journal of Applied Mathematics*, 80 (2), pp. 452-473, 2015.

- L43. P. Neff, **I.D. Ghiba**, A. Madeo, L. Placidi, G. Rosi. **A unifying perspective: the relaxed linear micromorphic continuum**, *Continuum Mechanics and Thermodynamics*, 26, pp. 639-681, 2014. (marcat drept "highly cited paper on Web of Science)
- L44. E. Bulgariu, **I.D. Ghiba**. **On the thermal stresses in anisotropic porous cylinders**, *Discrete and Continuous Dynamical Systems - Series S*, 6, December, pp. 1539-1550, 2013.
- L45. **I.D. Ghiba**. **On the spatial behaviour in bending theory of porous thermoelastic plates**. *Journal of Mathematical Analysis and Applications*, 403, pp. 129-142, 2013.
- L46. **I.D. Ghiba**, C. Galeş. **Some qualitative results in the linear theory of micropolar solid-solid mixtures**, *Journal of Thermal Stresses*, 36, pp. 426-445, 2013.
- L47. **I.D. Ghiba**. **On the temporal behaviour in the bending theory of porous thermoelastic plates**, *ZAMM*, 93, pp. 284-296, 2013.
- L48. **I.D. Ghiba**, C. Galeş. **On the fundamental solutions for micropolar fluid-fluid mixtures under steady state vibrations**, *Applied Mathematics and Computation*, 219, pp. 2749-2759, 2012.
- L49. S. Chiriță, **I.D. Ghiba**. **Rayleigh waves in Cosserat elastic materials**, *International Journal of Engineering Science*, 51, pp. 117-127, 2012.
- L50. C. Galeş, **I.D. Ghiba**, I. Ignătescu. **Asymptotic partition of energy in micromorphic thermopiezoelectricity**, *Journal of Thermal Stresses*, 34, pp. 1241-1249, 2011.
- L51. **I.D. Ghiba**. **On the steady vibrations problem in linear theory of micropolar solid-fluid mixture**, *European Journal of Mechanics A/Solids*, 30, pp. 584-593, 2011.
- L52. **I.D. Ghiba**. **On the thermal theory of micropolar solid-fluid mixture**, *Journal of Thermal Stresses*, 34, pp. 1-17, 2011.
- L53. C. Galeş, **I.D. Ghiba**. **On uniqueness and continuous dependence of solutions in viscoelastic mixtures**, *Meccanica*, 45, pp. 901-909, 2011.
- L54. S. Chiriță, **I.D. Ghiba**. **Inhomogeneous plane waves in elastic materials with voids**, *Wave Motion*, 47, pp. 333-342, 2010.
- L55. S. Chiriță, **I.D. Ghiba**. **Strong ellipticity and progressive waves in elastic materials with voids**, *Proceedings of the Royal Society A*, 466, pp. 439-458, 2010.
- L56. **I.D. Ghiba**. Representation theorems and fundamental solutions for micropolar solid-fluid mixtures under steady state vibrations, *European Journal of Mechanics A/Solids*, 29, pp. 1034-1041, 2010.
- L57. **I.D. Ghiba**. On the deformation of transversely isotropic porous elastic circular cylinder, *Archive of Mechanics*, 61, pp. 407-421, 2009.

- L58. **I.D. Ghiba.** Some uniqueness and stability results in the theory of micropolar solid-fluid mixture, *Journal of Mathematical Analysis and Applications*, 335, pp. 385-396, 2009.
- L59. S. Chiriță, C. Galeș, **I.D. Ghiba.** On spatial behavior of the harmonic vibrations in Kelvin-Voigt materials, *Journal of Elasticity*, 93, pp. 81-92, 2008.
- L60. **I.D. Ghiba.** Spatial estimates concerning the harmonic vibrations in rectangular plates with voids, *Archives of Mechanics*, 60, pp. 263-279, 2008.
- L61. **I.D. Ghiba.** Asymptotic partition of energy in micropolar mixture theory of porous media, *Meccanica*, 43, pp. 639-649, 2008.
- L62. **I.D. Ghiba.** Semi-inverse solution for Saint-Venant's problem in the theory of porous elastic materials, *European Journal of Mechanics - A/Solids*, 27, pp. 1060-1074, 2008.
- L63. **I.D. Ghiba.** Some uniqueness and continuous dependence results in the micropolar mixture theory of porous media, *International Journal of Engineering Science*, 44, pp. 1269-1279, 2006.

Articole în alte jurnale:

- L64. **I.D. Ghiba, C. Galeș.** **A uniqueness result for the motion of micropolar solid-fluid mixtures in unbounded domain**, *Ann. Univ. Ferrara*, 57, pp. 275-286, 2011.
- L65. **I.D. Ghiba.** On the spatial behaviour of harmonic vibrations in an elastic cylinder, *An. şt. Univ. Iaşi, Secţ. Matematică*, LII, f.1, pp. 75-86, 2006.

F. **Articole/studii** publicate în volumele unor manifestări științifice internaționale recunoscute din țară și din străinătate(cu ISI și/sau BDI); **Articole/studii** publicate în volumele unor manifestări științifice naționale:

- L66. M. Birsan, **I.D. Ghiba**, P.Neff, **Existence results for the higher order linear Cosserat shell model**, *PAMM-Proc. Appl. Math. Mech.* 22 (1), e 202200030, 2023.
- L67. P. Neff, M. Birsan, **I.D. Ghiba**, **A higher order geometrically nonlinear Cosserat-shell model with initial curvature effects**, *PAMM-Proc. Appl. Math. Mech.* 19 (1), e201900351, 2019.
- L68. M.V. d'Agostino, A. Madeo, G. Barbagallo, **I.D. Ghiba**, B. Eidel, P. Neff, **Anisotropic wave dispersion and band-gaps in mechanical metamaterials via the relaxed micromorphic model**, *PAMM-Proc. Appl. Math. Mech.* 18 (1), e201800413, 2018.
- L69. **I.D. Ghiba**, P. Neff, R.J. Martin. **Loss of ellipticity in additive logarithmic finite strain plasticity and related results on Hencky-type energies.** *PAMM-Proc. Appl. Math. Mech.* 16, pp. 341-342, 2016.

- L70. P. Neff, **I.D. Ghiba**, A. Madeo, I. Münch. **Null-Lagrangians and the indeterminate couple stress model**, *PAMM-Proc. Appl. Math. Mech.* 16, pp. 379-380, 2016.
- L71. R.J. Martin, P. Neff and **I.D. Ghiba**. **Rank-one convexity implies polyconvexity for isotropic, objective and isochoric elastic energies in the two-dimensional case**, *PAMM-Proc. Appl. Math. Mech.* 16, pp. 659-660, 2016.
- L72. P. Neff, **I.D. Ghiba**, J. Lankeit, R. Martin. **Rank-one convexity and polyconvexity of Hencky-type energies**, *PAMM-Proc. Appl. Math. Mech.* 14, pp. 735-736, 2014.
- L73. **I.D. Ghiba**, P. Neff, A. Madeo. **The relaxed micromorphic continuum model**, *PAMM-Proc. Appl. Math. Mech.* 14, pp. 733-734, 2014.
- L74. **I.D. Ghiba**. Existence and uniqueness results in the micropolar mixture theory of porous media. In O. Cârjă and I. Vrabie (eds), *Applied analysis and differential equations*, pp. 139-152. World Scientific, 2007.