LIST OF SELECTED PUBLICATIONS

YURI K. SHESTOPALOFF

Biology, Biophysics

1. Shestopaloff Yu. K. (2016). Metabolic allometric scaling model. Combining cellular transportation and heat dissipation constraints. *Journal of Experimental Biology*, **219**, 2481-2489.
2. Shestopaloff Yu. K. (2015). Why cells grow and divide? General growth mechanism and how it defines cells' growth, reproduction and metabolic properties. *Biophysical Reviews and Letters*, **10**(4), 209-256.
3. Shestopaloff Yu. K. (2014). Method for finding metabolic properties based on the general growth law. Liver examples. A General framework for biological modeling. *PLoS ONE* **9**(6): e99836. doi:10.1371/journal.pone.0099836
4. Shestopaloff Yu. K., Sbalzarini I. F. (2014). A method for modeling growth of organs and transplants based on the general growth law: Application to the liver in dogs and humans. *PLoS ONE* **9**(6): e99275. doi:10.1371/journal.pone.0099275
5. Shestopaloff Yu. K. (2013). A general method for modeling population dynamics and its applications. *Acta Biotheoretica*, **61**(4), 499-519. DOI 10.1007/s10441-013-9202-8.
6. Shestopaloff Yu. K. (2012). Predicting growth and finding biomass production using the general growth mechanism. *Biophysical Reviews and Letters*, **7**(3-4), 177-195. DOI: 10.1142/S1793048012500075
7. Shestopaloff Yu. K. (2011). A mathematical model of the physical growth mechanism and geometrical characterization of growing forms. *International Journal of Biomathematics*, **4**(1), 35-53. DOI: 10.1142/S1793524511001180
8. Shestopaloff Yu. K. (2016). Biophysical growth and reproduction mechanisms of cells and first principles of life origin and development. Preprint. arXiv:1609.09421 [q-bio.OT], https://arxiv.org/abs/1609.09421
9. Shestopaloff Yu. K. (2016). Interspecific allometric scaling of multicellular organisms as an evolutionary process of food chain creation, influenced by mechanical constraints. Preprint. arXiv: 1612.00098 [q-bio.OT], http://arxiv.org/abs/1612.00098
10. Shestopaloff Yu. K. (2016). The role of food chain balance and common nutritional environment in interspecific allometric scaling of unicellular organisms. Preprint. arXiv:1612.04695 [q-bio.OT], http://arxiv.org/abs/1612.04695

Mathematics

11. Shestopaloff Yu. K., Shestopaloff A. Y. (2017). New reconstruction and data processing methods for regression and interpolation analysis of multidimensional big data. Preprint. arXiv:1703.07009 [stat.ME]
12. Shestopaloff Yu. K., Shestopaloff A. Y. "Choosing the right solution of IRR equation to measure investment success." The Journal of Performance Measurement. 2013, **18**(1), 33-48. **Note:** ***This article received Dietz Award in year 2015, which is the main industry award***.
13. Shestopaloff Yu. K. "Conceptual framework for developing and verification of attribution models. Arithmetic attribution models". The Journal of Performance Measurement, 2012, **17**(1),

48-59. **Note**: ***A digest of the article has been published in "CFA Digest"*** (CFA is one of the main bodies in financial industry). *CFA Digest*, May 2013, Vol. 43, No. 2: 96-98, (doi: 10.2469/dig.v43.n2.44), http://www.cfapubs.org/doi/abs/10.2469/dig.v43.n2.44

14. Shestopaloff Yu. K. Properties of sums of some elementary functions and their application to computational and modeling problems. *Journal of Computational Mathematics and Mathematical Physics*, 2011, **51**(5), 699-712. DOI: 10.1134/S0965542511050162
15. Shestopaloff, Yu. K. "New high performance computational methods for mortgages and annuities", The Journal of Performance Measurement, 2011, **15**(2), 41-54.
16. Shestopaloff Yu. K. "A Model for a global Investment Attribution Analysis", The Journal of Performance Measurement, 2009, **13**(3), 42-49.
17. Shestopaloff Yu. K. "Geometric Attribution Model and a Symmetry Principle", The Journal of Performance Measurement, 2008, No. 4, 29-39.
18. Shestopaloff Yu. K. "The role of conceptual context in the problem of finding rate of return", The Journal of Performance Measurement, 2008, Winter, 13, 37-50. **Note: *The* a*rticle received JPM Honorary Mention Award***.
19. "Consistent Linking Concept for Fast Calculation of Rate of Return and Research of Investment Strategies". - Shestopaloff A. Yu., Shestopaloff K. Yu. (under the supervision of Shestopaloff Yu. K.). The Journal of Performance Measurement (JPM), 2005, 10(1), pp. 50-63. **Note: *The article received JPM Honorary Mention Award***.

Optics, electronics, remote sensing

20. Shestopaloff Yu. K. Polarization invariants and retrieval of surface parameters using polarization measurements in remote sensing applications, *Applied Optics*, 2011, Vol. 50, Iss. 36, 6606-6616. DOI: 10.1364/AO.50.006606
21. Shestopaloff Yu. K. "Distributed parametric effect in long lines and its applications", *International Journal of Electronics*, 2011, Vol. 98, No. 10, p. 1433-1443. DOI: 10.1080/00207217.2011.601441

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1. Shestopaloff Yu. K. (2019) Elementary Functions and Equations. Fermat Last Theorem and Transformation of Geometrical Forms. 3d Revised edition, AKVY Press, Toronto, 306 p.
2. Shestopaloff Yu. K. (2018) Elementary Functions and Equations. Modeling Natural Phenomena. 2d Revised edition, AKVY Press, Toronto, 300 p.
3. Shestopaloff Yu. K. (2015) Framework for developing attribution models. Symmetrical arithmetic and geometric attribution. AKVY Press, 108 p.
4. Shestopaloff Yu. K. Shestopaloff A. Y. (2015) Solving the puzzle of IRR equation. Choosing the right solution to measure investment success. 2-d revised edition. 108 p.
5. Shestopaloff Yu. K. (2014). Growth as a union of form and biochemistry. How the unity of geometry and chemistry creates living worlds through fundamental law of nature - the General growth law. 4th rev. ed., AKVY Press, 456 p.
6. Smart Innovations, Systems and Technologies. Smart modeling for engineering systems. Editors Petrov I. B., Favorskaya A. V., Favorskaya M. N., Simakov S. S. and Jain L. C. V. 133. The

article by Shestopaloff Y. K. "Life as a physical phenomenon governed by general growth law and biochemical mechanisms. Growth equation and its mathematical properties", 293-308. Springer Nature Switzerland (2018).
7. Bioinformatics. A collective monograph. Chapter 16, Modeling growth of living organisms. Pawlowski PH, Shvernik A, Polyanski A, Zelenkevich P (eds), Vol. 10, Polish Academy of Science, Exit-C, p. 361-386 (2014)
8. Shestopaloff Yu. K. (2011) Design and implementation of reliable and high performance software systems including distributed and parallel computing and interprocess communication designs. AKVY Press, 226 p.
9. Shestopaloff Yu. K. (2009) Science of inexact mathematics. AKVY Press, 592 p.
10. Shestopaloff Yu. K. (2010) Mortgages and Annuities: an Introduction. AKVY Press, 206 p.
11. Shestopaloff Yu. K. (2010) Mortgages and Annuities: Mathematical Foundations and Computational Algorithms. AKVY Press, 287 p.
12. Shestopaloff Yu. K. (2010). Physics of Growth and Replication. Physical and Geometrical Perspectives on Living Organisms' Development. AKVY Press, 174 p.
13. Shestopaloff Yu. K. (2010) Properties and interrelationships of polynomial, exponential, logarithmic and power functions with applications to modeling natural phenomena. AKVY Press, 230 p.