

СВЕДЕНИЯ О ВЕДУЩЕЙ ОРГАНИЗАЦИИ

диссертационной работы Егорчева Михаила Вячеславовича
на тему «Полуэмпирическое нейросетевое моделирование нелинейных динамических систем», представленной на соискание ученой степени кандидата физико-математических наук по специальности 05.13.18 – «Математическое моделирование, численные методы и комплексы программ»

Наименование организации: Федеральное государственное учреждение «Федеральный научный центр Научно-исследовательский институт системных исследований Российской Академии наук» (ФГУ ФНЦ НИИСИ РАН).

Директор ФГУ ФНЦ НИИСИ РАН: Власов Сергей Евгеньевич,
доктор технических наук

Адрес организации: 117218, Москва, Нахимовский просп., 36, к.1.

Контактные телефоны: +7 (499)124-48-64, +7 (495) 718-21-10

Факс: +7 (495) 719-76-81

Адрес электронной почты: niisi@niisi.msk.ru

Веб-сайт: <https://www.niisi.ru/iont/>

Основные работы по профилю диссертации:

- D. Negrov, I. Karandashev, V. Shakirov, Yu. Matveyev, W. Dunin-Barkowski, A. Zenkevich. An approximate backpropagation learning rule for memristor based neural networks using synaptic plasticity // Neurocomputing, Volume 237, 10 May 2017, Pages 193-199.
- Дунин-Барковский В.Л., Соловьева К.П. Принцип Павлова в проблеме обратного конструирования мозга // Нейроинформатика-2016. XVIII Международная научно-техническая конференция. Сборник научных трудов. Часть 1, МИФИ, 2016, с. 11-23.
- Solovyeva Ksenia P., Karandashev Iakov M., Zhavoronkov Alex, Dunin-Barkowski Witali L. Models of Innate Neural Attractors and Their Applications for Neural Information Processing // Frontiers in Systems Neuroscience, Published January 5, 2016, Vol. 9, No. 00178.
- Karandashev I.M., Dunin-Barkowski W.L. Computational verification of approximate probabilistic estimates of operational efficiency of random neural networks // Optical Memory and Neural Networks, 2015, V. 24, no. 1, pp. 8-17. DOI=3389/fnsys.2015.00178, 13 p.
- I.M. Karandashev and B.V. Kryzhanovsky. Matrix Transformation Method in Quadratic Binary Optimization. Optical Memory and Neural Networks (Information Optics), vol.24, No.2, pp.67-81, 2015.

- Boris Kryzhanovsky and Leonid Litinskii. Generalized approach to description of energy distribution of spin system. *Optical Memory and Neural Networks (Information Optics)*, vol.24, No.3, pp.165-185, 2015. arXiv:1505.03393
- I.M. Karandashev, B.V. Kryzhanovsky. Attraction Area of Minima in Quadratic Binary Optimization. *Optical Memory and Neural Networks (Information Optics)*, vol.23 , No.2, pp.84-88, 2014.
- Boris Kryzhanovsky and Leonid Litinskii. Approximate method of free energy calculation for spin system with arbitrary connection matrix. *International Conference on Mathematical Modeling in Physical Sciences IC-MSQUARE*, August 28-31, 2014, Madrid, Spain.
- B. Kryzhanovsky, L. Litinskii. Approximate method of free energy calculation for spin system with arbitrary connection matrix. ArXiv 1410.6696
- Iakov Karandashev and Boris Kryzhanovsky. Mix-Matrix Transformation Method for Max-Cut Problem. *ICANN, Lecture Notes in Computer Science*, Vol. 8681, p.323 (2014).
- B. Kryzhanovsky, L. Litinskii. Generalized Bragg-Williams Equation for System with an Arbitrary Long-Range Interaction. *Doklady Mathematics*, Vol. 90, No. 3, pp. 784–787 (2014).
- Red'ko V.G. Modeling of Cognitive Evolution. Toward the Theory of Evolutionary Origin of Human Thinking. Moscow: KRASAND/URSS, 2018.
- Red'ko V.G., Beskhlebnova G.A. Approaches to modeling of nontrivial cognitive behavior // In: Huang T, Lv J., Sun C., Tuzikov A.V. (Eds.). *Advances in Neural Networks - ISNN 2018. 15th International Symposium on Neural Networks*, ISNN 2018, Minsk, Belarus, June 25-28, 2018, Proceedings, LNCS 10878. Springer International Publishing Switzerland, 2018. PP. 37-43.
- Saakian D.B., Red'ko V.G. Sysers: The important model of self-reproducing system // *Biologically Inspired Cognitive Architectures*. 2018. Vol. 24. PP. 115--121.
- Red'ko V.G. Mechanisms of interaction between learning and evolution // *Biologically Inspired Cognitive Architectures*. 2017. Vol. 22. PP. 95-103.
- Red'ko V.G., Sokhova Z.B. Processes of self-organization in the community of investors and producers // In: Boris Kryzhanovsky Witali Dunin-Barkowski, Vladimir Redb'ko (Eds.) *Advances in Neural Computation, Machine Learning, and Cognitive Research: Selected Papers from the XIX International Conference on Neuroinformatics*, October 2-6, 2017, Moscow, Russia. Springer International Publishing Switzerland, 2017. PP. 163-169. DOI: 10.1007/978-3-319-66604-4_24.
- Red'ko V.G. Epistemological foundations of investigation of cognitive evolution // *Biologically Inspired Cognitive Architectures*. 2016. Vol. 18. P. 105-115.
- Red'ko V.G., Sharipova T.I., Beskhlebnova G.A. Modeling of searching agent behavior by means of neural gas // *Procedia Computer Science*. 2016. Vol. 88. P. 409-414.
- Red'ko V.G. Modeling of cognitive evolution: Agent-based investigations in cognitive science // In: Long Cheng L., Liu Q., Ronzhin A. (Eds.). *Advances in Neural Networks - ISNN 2016. 13th International Symposium on Neural Networks*, ISNN 2016, St. Petersburg, Russia, July 6-8, 2016,

Proceedings, LNCS 9719. PP. 720-730. Springer International Publishing Switzerland, 2016. DOI: 10.1007/978-3-319-40663-3_83

- Red'ko V.G. Models of autonomous cognitive agents // In: Samsonovich A.V., Klimov V.V., Rybina G.V. (Eds.). Biologically Inspired Cognitive Architectures (BICA) for Young Scientists. Proceedings of the First International Early Research Career Enhancement School (FIERCES 2016). 2016, pp. 9-15. Springer International Publishing Switzerland, 2016. DOI: 10.1007/978-3-319-32554-5_2
- Sokhova Z.B., Red'ko V.G. Agent-based model of interactions in the community of investors and producers // In: Samsonovich A.V., Klimov V.V., Rybina G.V. (eds.) Biologically Inspired Cognitive Architectures (BICA) for Young Scientists. Proceedings of the First International Early Research Career Enhancement School (FIERCES 2016). 2016, pp. 235-240. Springer International Publishing Switzerland, 2016. DOI: 10.1007/978-3-319-32554-5_30
- Red'ko V.G. Modeling of Cognitive Evolution: Toward A Theory of the Evolutionary Origin of Thinking. Moscow: URSS, 2015 (Book in Russian).
- Red'ko V.G. Modeling of cognitive evolution: perspective direction of interdisciplinary investigation // Procedia Computer Science. 2015. Vol. 71. PP. 215-220.
- Red'ko V.G. The Model of Interaction between Learning and Evolutionary Optimization // Mathematical Biology and Bioinformatics. 2014. Vol. 9. No. 2. PP. t1-t15. See also:

Председатель диссертационного совета
Д 212.125.04, д.ф.-м.н., доцент

А. В. Наумов

Ученый секретарь диссертационного совета
Д 212.125.04, к.ф.-м.н.

В. А. Рассказова