

Curriculum Vitae of Sergey Kucheryavskiy

Common information

Name: Sergey Vladimirovich Kucheryavskiy, Ph.D.

Place of birth: USSR, UzSSR, Andizhan area, Leninsk city

Date of birth: 19.03.1976

Nationality: Russian

Significant other: Elena Kucheryavskaya

E-mail: svk@aaue.dk

Spoken languages: Russian, English

Education

1997 — M.Sc. in Physics, Altai State University, Barnaul, Russia

2001 — Ph.D. (physics, mathematics), Altai State University, Barnaul, Russia

Professional experience

Employer 2: Aalborg University Esbjerg

2007-pr.: Assistant professor

Employer 1: Altai State University

2002-2007: Associate professor

1998-2002: Assistant professor

1996-2001: Network and System Administrator

Computer skills

Programming: C/C++, Java, MatLab, PHP.

Web-technologies: HTML/XHTML, CSS, XML/XSLT, JavaScript/DOM.

System and networks administration: FreeBSD/Linux (OS, samba, network services), experienced with all Windows family OS. Strong skills in TCP/IP networks. Five years of networks and system administration in Altai State University (1 800 personal computers, 8 campuses, ~ 20 servers).

Fields of research

Chemometrics, Multivariate Data Analysis, Image and Signals Processing and Analysis, Process Analytical Technologies, Network Technologies.

International conference: organizer

Sixth Winter Symposium on Chemometrics (WSC-6),

Kazan, Russia, February 18—22, 2008: Member of organizing committee

Fifth Winter Symposium on Chemometrics (WSC-5),

Samara, Russia, February 18—23, 2006: Member of organizing committee

Fourth Winter Symposium on Chemometrics (WSC-4),

Chernogolovka, Russia, February 15—18, 2005: Member of organizing committee

Second Winter Symposium on Chemometrics (WSC-2),
Barnaul, Russia, February 28—March 6, 2003: Science Secretary

Peer reviewer

- Chemometrics and intelligent laboratory systems

Teaching and supervising

Graduate Courses (M. Sc), lectures and laboratory works

- Image processing and analysis
- Network technologies
- Computer graphics
- Operational systems and programming languages
- Modern methods of data analysis

Ph.D. theses supervised 2007–2009

- Classification and analysis of medical images based on soft models

M.Sc. and B.Sc. theses supervised 2002–2008

15 M.Sc. and 20 B.Sc. thesis projects – Selected titles:

- Estimation of dementia ratio by analysis of tomogram images
- Classification and analysis of white blood cells
- Developing of method for image classification based on soft models
- Developing of network applications using Winsocket and WinPCAP libraries
- Solving of electro-impedance tomography inverse problem using neural networks
- Creating of universal library for transferring experimental data over TCP/IP
- Multivariate data analysis for investigation of heterogeneous self-similar surfaces
- Multivariate analysis of satellite images
- Wavelet analysis and processing of the acoustic signals
- Multivariate analysis of the microstructure of heterogeneous metal materials
- Developing of hardware and software complex for electroimpedance tomography

Doctoral opposition

has served as opponent at 1 Ph.D. creation:

- **Alexander Antropov**, Altai State Technical University (Russia), 11.09.2006:
“Developing of models, algorithms and software for forecasting demographic status in small cities in Russia”

Research qualifications

Publications

1. **Kucheryavski S.**, Belyaev I. Classification and analysis of non-isotropic images by Angle Measure Technique (AMT) with contour unfolding. *Analytica Chimica Acta*, 2009 (accepted, in publish) DOI: 10.1016/j.aca.2008.12.016
2. Rodionova O., **Kucheryavskiy S.**, Marks C. Symposium Report: 6th Russian Winter Symposium on Chemometrics (WSC-6). *Chemometrics and Intelligent Laboratory Systems*, 2008. (accepted, in publish) DOI: 10.1016/j.chemolab.2008.10.008
3. Yankovskiy V.E., **Kucheryavski S.**, Belyaev I., Fominykh S. Using multivariate image analysis of trabecular bones for age estimation. *Problems of medicine expertise*, 2 (30), 2008. P. 8-11. (in Russian).
4. Ole Grøn, F. Stylegar, S. Palmer, S. Aase, P. Orlando, **S. Kucheryavskiy**, K. Esbensen. Practical Use of Multispectral Satellite Images in general Norwegian Cultural Heritage Management and focused Viking Age Research. 2008. Proceedings of First EARSeL International Workshop "Advances in Remote Sensing for Archeology and Cultural Heritage Management", Rome, Italy, 21-24, October, 2008.
5. **Kucheryavski S.**, Belyaev I., Fominykh S., Estimation of age in forensic medicine using multivariate approach to image analysis. *Chemometrics and Intelligent Laboratory Systems*, 2008. (accepted, in publish). DOI:10.1016/j.chemolab.2008.07.011
6. **Kucheryavski S.**, et al. Optimal Corrections for Digitization and Quantification Effects in Angle Measure Technique (AMT) Texture Analysis. *Journal of Chemometrics*, v.22 (2008) pp. 722-737. (accepted, in publish). DOI: 10.1002/cem.1118
7. Kvaal K., **Kucheryavski S.**, Maths Halstensen, Simen Kvaal, Andreas S. Flø, Pentti Minkkinen, Kim H. Esbensen. eAMTexplorer – a comprehensive software for texture and signal characterization using Angle Measure Technique. *Journal of Chemometrics*, v.22 (2008) pp. 717-721. DOI: 10.1002/cem.1160
8. **Kucheryavski S.V.**, Polyakov V.V. Material's structure investigation using multivariate data analysis. *Industrial Laboratory and Material Diagnostic*. N 8, v. 73, 2007. P. 32-36. (in Russian).
9. **Kucheryavski S.** Using hard and soft models for classification of medical images. *Chemometrics and Intelligent Laboratory Systems*, 2007, v. 88 (1), P. 100-106.
10. **Kucheryavski S.V.**, Belyaev I.A., Pijanin A.I., Zhukova E.N., Mukhortova O.A. Using principal component analysis for blood cell classification. *Clinical and Laboratory Diagnostic*. 2006. N 9. P. 53-54. (in Russian)
11. **Kucheryavski S.V.** Process Analytical Technology. *Quality Control Methods*. Moscow. 2006. N 5, P. 12-17. (in Russian)
12. Kim H. Esbensen, Alexey Pomerantsev, Oxana Rodionova and **Sergei Kucheryavski**. Symposium report: 5th Russian winter symposium on chemometrics. *Chemometrics and Intelligent Laboratory Systems*, 2006, v. 83, P. 180-181.
13. **Kucheryavski S.**, Polyakov V., Govorov A. Analysis of simulated fracture surfaces using AMT and fractal geometry methods. *Progress in Chemometrics Research*. (Eds: Pomerantsev A.L.). Nova Science Publishers, Inc., USA. 2005. P. 3-11.
14. **Kucheryavski S.V.**, Suranov A.Ya. Network technologies. Creating network applications in LabVIEW. Barnaul. Altai State University. 2005. 72 p. (in Russian)

15. **Kucheryavski S.V.**, Ployakov V.V., Govorov V.V. AMT analysis of simulated fracture surfaces. The News of Altai State University. 2005. N 1. P. 120-123. (in Russian)
16. **Kucheryavski S.**, Marks C., Varmuza K. Meeting report: Fourth winter symposium on chemometrics – WSC4. Chemometrics and Intelligent Laboratory Systems. 2005. № 78. P. 138-139.
17. **Kucheryavski S.V.**, Polyakov V.V. AMT analysis of powder materials surfaces. The News of Perm State Technical University. 2005. N 11. P. 159-162. (in Russian)
18. **Kucheryavski S.**, Esbensen K. Fracture surface characterization of porous materials: fractal geometry vs. AMT (Angle Measure Technique). Proceed. of 11th International Conference on Fracture. Torino, Italy. 2005.
19. Polyakov V.V., Egorov A.V., Lependin A.A., **Kucheryavski S.V.** Modelling of strain hardening of powder metal materials. News of Perm State Technical University. 2004. N 10. P. 61-65. (in Russian)
20. Polyakov V.V., **Kucheryavski S.V.**, Egorov A.V. Investigation of phase boundaries in powder metal materials. News of Perm State Technical University. 2003. N 9. P. 62-68. (in Russian)
21. Polyakov V.V., **Kucheryavski S.V.**, Egorov A.V. Fractal analysis of deformation mesostucture of high-porous metal materials. Physical Mesomechanics. 2001. V. 4. N 5. P. 103-106.
22. Polyakov V.V., **Kucheryavski S.V.** The analysis of fracture surfaces of porous metal materials. Proceedings of VI Intern. school-seminar «Defect structures evolution in condensed matters. Computer simulation». Barnaul, 2001. P.75-76. (in Russian)
23. Polyakov V.V., **Kucheryavski S.V.** The fractal analysis deformation structure of porous metals. Proceedings of Intern. conf. «Mesomechanics: foundation and applications» (MESO - 2001) Tomsk, 2001. P.116-117. (in Russian)
24. Polyakov V.V., **Kucheryavski S.V.** The fractal analysis of a porous material structure. Technical Physics Letters. 2001. Vol. 27. N 7. P. 592-593.
25. Polyakov V.V., **Kucheryavski S.V.**, Egorov A.V. Investigation of fractal properties of porous metal materials. Proc. of Europ. Conf. "Euromat-99". Microstructural investigation and analysis (Eds.: D.Jouffrey, J.Svejcar) .Wiley-VCH, Weinheim, Germany. 2000. Vol.4. P.7-10.
26. Polyakov V.V., **Kucheryavski S.V.** The features of boundaries fractal characteristics in porous pseudoalloys. Proceedings of V Intern. Seminar-School «Defect structures evolution in condensed matters». Barnaul, 2000. P.17-18.
27. Polyakov V.V., **Kucheryavski S.V.** The fractal analysis of phase and grain boundaries in porous pseudoalloys. The News of Altai State University. 2000. N 1. C. 88-89. (in Russian)
28. Polyakov V.V., **Kucheryavski S.V.** Computer analysis of deformation structure of porous metals. Proceedings of IV Intern. conf. "Evolution of defect structure in condensed matters". Barnaul, 1998. P. 14-16.

Lectures/Presentations

1. **Kucheryavski S.** Introduction to Chemometrics. Key lecture at International conference Methodological aspects of Chemometrics teaching in Europe (including Russia). Russia, St. Petersburg, February 11, 2009.
2. **Kucheryavski S.** Image analysis in Chemometrics. Key lecture at Sixth Winter School on Chemometrics. Russia, Kazan, February 18-22, 2008.

3. **Kucheryavski S.** Using black and white models for classification of medical images. Fifth Winter Symposium on Chemometrics. Russia, Samara, February 18-23, 2006.
4. **Kucheryavski S.** Modern methods of multivariate data classification. Invited lecture on chemometrics school in Samara State Technical University. Samara, Russia. February 16, 2006.
5. **Kucheryavski S.**, Esbensen K. Fracture surface characterization of porous materials: fractal geometry vs. AMT (Angle Measure Technique). 11th International Conference on Fracture. Torino, Italy. March, 20-25 2005.
6. **Kucheryavski S.** Multivariate Image Classification: Comparison of AMT and Transform Based Methods. Fourth Winter Symposium on Chemometrics. Russia, Chernogolovka, February 15-18, 2005.
7. **Kucheryavski S.** Multivariate data classification. Invited lecture on chemometrics school in Institute of Problems of Chemical Physics. Chernogolovka, Russia. February 14, 2005.
8. **Kucheryavski S.**, Polyakov V., Govorov A. The analysis of fracture surfaces of porous metal materials using AMT and fractal geometry methods. Third Winter School on Chemometrics. Russia, Pushkinskiye Gory, February 16-20, 2004.
9. **Kucheryavski S.** Fractal analysis of the deformation structure of porous pseudoalloys. Second Winter School on Chemometrics. Belakurikha, Russia. February 28 – March 04, 2003.
10. **Kucheryavski S.**, Polyakov V. Using fractal geometry methods for analysis of fracture surfaces of porous iron. Fractals and Applied Synergetics. Moscow, Russia. November 26 – 30, 2001.
11. Polyakov V.V., **Kucheryavski S.V.** The fractal analysis deformation structure of porous metals. Intern. conf. "Mesomechanics: foundation and applications" (MESO - 2001) Tomsk, September, 2001.
12. Polyakov V., **Kucheryavski S.** Fractal analysis of phase and pore boundaries in porous metals. Fractals and Applied Synergetics. Moscow, Russia. October, 18 – 21, 1999.
13. Polyakov V.V., **Kucheryavski S.V.**, Egorov A.V. Investigation of fractal properties of porous metal materials. European Conference "Euromat-99". Germany, September 27 – 30, 1999.
14. Polyakov V.V., **Kucheryavski S.V.** Computer analysis of deformation structure of porous metals. IV International conference "Evolution of defect structure in condensed matters". Barnaul, October, 1998.