
Dr. Sc., Professor Eugene SEMENKIN

List of scientific publications

I. Papers published in peer-reviewed international journals (indexed in Web of Science and/or Scopus)

1. Akhmedova Sh., Stanovov V., Semenkin E. Selective Pressure Strategy in differential evolution: Exploitation improvement in solving global optimization problems // *Swarm and Evolutionary Computation*. Volume 50, November 2019, 100463.
2. Semenkin E. Computational Intelligence Algorithms based Comprehensive Human Expert and Data driven Model Mining for the Control, Optimization and Design of Complicated Systems // *International Journal on Information Technologies and Security*. - Vol. 11, Special Issue, P.63-66, 2019.
3. Akhmedova S., Stanovov V., Semenkin E. (2019) Success-History Based Position Adaptation in Co-operation of Biology Related Algorithms. In: Tan Y., Shi Y., Niu B. (eds) *Advances in Swarm Intelligence. ICSI 2019. Lecture Notes in Computer Science*, vol 11655. P. 39-49. Springer, Cham
4. Koložvari A., Stojanović R., Zupan A., Semenkin E., Stanovov V., Kofjač D., Škraba A. Speech-Recognition Cloud Harvesting for Improving the Navigation of Cyber-Physical Wheelchairs for Disabled Persons // *Microprocessors and Microsystems*, Volume 69, Pages 179-187.
5. Akhmedova, Sh., Stanovov, V., Erokhin, D., Semenkin E. Position adaptation of candidate solutions based on their success history in nature-inspired algorithms // *International journal on information technologies and security*, 2019, 11(1), pp. 21-32.
6. Brester Ch., Kauhanen J., Tuomainen T-P., Voutilainen S., Rönkkö M., Ronkainen K., Semenkin E., Kolehmainen M. Evolutionary methods for variable selection in the epidemiological modeling of cardiovascular diseases // *BioData Mining* 11(1), 2018. *
7. Yakimov I., Zaloga A., Dubinin P., Bezrukova O., Samoilo A., Burakov S., Semenkin E., Semenkina M., Andruschenko E. Application of Evolutionary Rietveld Method Based XRD Phase Analysis and a Self-Configuring Genetic Algorithm to the Inspection of Electrolyte Composition in Aluminum Electrolysis Baths // *Crystals* 8(11):402, 2018.
8. Akhmedova S.A., Stanovov V.V., Semenkin E.S. Cooperation of Bio-inspired and Evolutionary Algorithms for Neural Network Design // *Journal of Siberian Federal University. Mathematics & Physics*, 2018, 11(2), 148-159.
9. Akhmedova, Sh., Stanovov, V., Semenkin, E. Fuzzy controlled cooperative bio-inspired algorithm for binary optimization // *International journal on information technologies and security*, 2018, 10(2), pp. 69-78.
10. Stanovov, V., Akhmedova, Sh., Semenkin, E. Designing the fuzzy rule base by solving a large-scale single-objective optimization problem with differential evolution // *International journal on information technologies and security*, 2018, 10 (2), pp. 79-88.
11. Ryzhikov, I., Brester, Ch., Semenkin, E. A multi-objective approach with a restart meta-heuristic for the linear dynamical systems inverse mathematical problem // *International journal on information technologies and security*, 2018, 10(1), pp. 93-102.
12. Skraba, A., Stanovov, V., Semenkin, E., Koložvari, A., Kofjac, D. Development of algorithm for combination of cloud services for speech control of cyber-physical systems // *International journal on information technologies and security*, 2018, 10(1), pp. 73-82.

13. Brester Ch., Ryzhikov I., Semenkin E. 'Restart operator for multi-objective genetic algorithms: implementation, choice of control parameters and ways of improvement' // International Journal on Information Technologies & Security, 2017, 9(4), 2017. P. 25-36.
14. Sopov E., Semenkin E. 'Automated Synthesis of Selection Operators in Genetic Algorithms using Genetic Programming' // International Journal on Information Technologies and Security, 2017, 9(4), 2017. P. pp. 13-24.
15. Brester Ch., Ryzhikov I., Semenkin E. 'Multi-objective Optimization Algorithms with the Island Metaheuristic for Effective Project Management Problem Solving' // Organizacija–Journal of Management, Informatics and Human Resources, 2017, Vol. 50, Number 4, pp. 364-373.
16. Škraba A., Stanovov V.V., Semenkin E.S., Kofjač D. 'Hybridization of stochastic local search and genetic algorithm for human resource planning management' // Organizacija–Journal of Management, Informatics and Human Resources. 2016. T. 49. № 1. – P. 42-54.
17. Akhmedova S.A., Semenkin E.S. Collective bionic algorithm with biogeography based migration operator for binary optimization // Journal of Siberian Federal University. Mathematics & Physics, 2016, 9(1), 3-10.
18. Stanovov V.V., Semenkin E.S., Semenkina O.E. 'Self-configuring hybrid evolutionary algorithm for fuzzy imbalanced classification with adaptive instance selection' // Journal of Artificial Intelligence and Soft Computing Research. 2016. T. 6. № 3. – P. 173-188. *
19. Brester, C., Semenkin, E., Sidorov, M. Multi-objective heuristic feature selection for speech-based multilingual emotion recognition // Journal of Artificial Intelligence and Soft Computing Research, Volume 6, Issue 4, 2016, Pages 243-253.*
20. Sidorov, M., Minker, W., Semenkin, E.S. Speech-based emotion recognition and speaker identification: Static vs. dynamic mode of speech representation // Journal of Siberian Federal University - Mathematics and Physics, Volume 9, Issue 4, 2016, Pages 518-523.
21. Sergienko, R.B., Shany, M., Minkerz, W., Semenkin, E.S. Topic categorization based on collectives of term weighting methods for natural language call routing // Journal of Siberian Federal University - Mathematics and Physics, Volume 9, Issue 2, 2016, Pages 235-245.
22. Sidorov, M., Schmitt, A., Semenkin, E.S. Automated recognition of paralinguistic signals in spoken dialogue systems: Ways of improvement // Journal of Siberian Federal University - Mathematics and Physics, Volume 8, Issue 2, 2015, Pages 208-216.
23. Vashkevich, A.V., Zhukov, V.G., Semenkin, E.S. Privacy-preserving building of self-organizing maps // Journal of Siberian Federal University - Mathematics and Physics, Volume 8, Issue 4, 2015, Pages 478-486.
24. Zaloga A., Burakov S., Semenkin E., Yakimov I. 'Research on convergence of multipopulation binary- and real-coded genetic algorithms for solution of crystal structure from X-Ray powder diffraction data' // Crystal Research and Technology, 1-5 (2015).
25. Škraba A., Kofjač D., Znidarsic A., Maletic M., Rozman C., Semenkin E., Semenkina M., Stanovov V. Application of Self-Configuring Genetic Algorithm for Human Resource Management // Journal of Siberian Federal University. Mathematics & Physics 2015, 8(1), 94–103
26. Spirina A.V., Semenkin E.S., Schmitt A., Minker W. Interaction quality in human-human conversations: problems and possible solutions // Journal of Siberian Federal University. Mathematics & Physics 2015, 8(2), 217–223.
27. Burakov S.V., Semenkin E.S. 'Solving variational and Cauchy problems with self-configuring genetic programming algorithm' // International Journal of Innovative Computing and Applications, 2013, vol. 5, No. 3, pp. 152-162.
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29. Antamoshkin A., Semenkin E. 'Local search efficiency when optimizing unimodal pseudoboolean functions' // Informatica. 1998. T. 9. № 3. – P. 279-296.

30. Antamoshkin A.N., Semenkin E.S. 'Optimization of polimodal locally monotone pseudoboolean functions' // Informatica. 1991. T. 2. № 3. – P. 331-351.
31. Antamoshkin A.N., Saraev V.N., Semenkin E.S. 'Optimization of unimodal monotone pseudoboolean functions' // Kybernetika. 1990. T. 26. № 5. – P. 432-442.

II. Peer-reviewed book contributions in international editions (indexed in Web of Science and/or Scopus)

32. Mamontov, D.; Polonskaia, Ia.; Skorokhod, A.; Semenkin E.; Kessler V.; Schwenker F. Evolutionary Algorithms for the Design of Neural Network Classifiers for the Classification of Pain Intensity // Multimodal pattern recognition of social signals in human-computer-interaction, MPRSS 2018. - Lecture Notes in Artificial Intelligence. Vol. 11377. – P. 84-100. – 2019.
33. Akhmedova S., Stanovov V., Semenkin E. (2019) Success-History Based Position Adaptation in Co-operation of Biology Related Algorithms. In: Tan Y., Shi Y., Niu B. (eds) Advances in Swarm Intelligence. ICSI 2019. Lecture Notes in Computer Science, vol 11655. P. 39-49. Springer, Cham
34. Akhmedova Sh., Stanovov V., Semenkin E. Soft Island Model for Population-Based Optimization Algorithms // Advances in Swarm Intelligence, LNCS 10941, P.1, 2018, Pp. 68-77.
35. Brester Ch., Ryzhimov I., Semenkin E., Kolehmainen M. On Island Model Performance for Cooperative Real-Valued Multi-objective Genetic Algorithms // Advances in Swarm Intelligence, LNCS 10941, P.1, 2018, Pp. 210-219. *
36. Akhmedova, S., Semenkin, E., Stanovov, V. Co-operation of biology related algorithms for solving opinion mining problems by using different term weighting schemes // Lecture Notes in Electrical Engineering, Volume 430, 2018, Pages 73-90.
37. Brester, C., Ryzhikov, I., Semenkin, E., Kolehmainen, M. On island model performance for cooperative real-valued multi-objective genetic algorithms // Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), Volume 10941 LNCS, 2018, Pages 210-219.
38. Akhmedova, S., Semenkin, E., Stanovov, V., Vishnevskaya, S. 'Fuzzy logic controller design for tuning the cooperation of biology-inspired algorithms' // Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics). Volume 10386 LNCS, 2017, Pages 269-276.
39. Ryzhikov I., Brester C., Semenkin E. A Novel Linear Time Invariant Systems Order Reduction Approach Based on a Cooperative Multi-objective Genetic Algorithm // International Conference in Swarm Intelligence, LNCS, Volume 10386, 49-56.
40. Brester, Ch., Ryzhikov, I., Semenkin, E. 'On performance improvement based on restart meta-heuristic implementation for solving multi-objective optimization problems' // Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics). Volume 10386 LNCS, 2017, Pages 23-30.
41. Ryzhikov I.S., Semenkin E.S., Akhmedova Sh.A. 'Linear ODE coefficients and initial condition estimation with co-operation of biology related algorithms' // Lecture Notes in Computer Science. 2016. T. 9712. – P. 228-235. *
42. Akhmedova, S., Semenkin, E., Stanovov, V. Fuzzy rule-based classifier design with co-operation of biology related algorithms // Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) Volume 9713 LNCS, 2016, Pages 198-205.
43. Akhmedova S., Semenkin E., Stanovov V. Co-operation of Biology Related Algorithms for Solving Opinion Mining Problems by Using Different Term Weighting Schemes // Lecture Notes in Electrical Engineering, 208, 2016, Volume 430, 73-90.

44. Zaloga, A., Akhmedova, S., Yakimov, , Burakov, S., Semenkin, E., Dubinin, P., Piksina, O., Andryushchenko, E. Genetic algorithm for automated X-ray diffraction full-profile analysis of electrolyte composition on aluminium smelters // Lecture Notes in Electrical Engineering, Volume 383, 2016, Pages 79-9312th
45. Zaloga A., Burakov S., Semenkin E., Yakimov I., Akhmedova Sh., Semenkina M., Sopov E. 'On the Application of Co-Operative Swarm Optimization in the Solution of Crystal Structures from X-Ray Diffraction Data' // Advances in Swarm and Computational Intelligence, LNCS 9140, 2015, pp. 89-96.
46. Semenkina M., Semenkin E. 'Memetic Self-Configuring Genetic Programming for Fuzzy Classifier Ensemble Design' // Advances in Swarm and Computational Intelligence, LNCS 9140, 2015, pp. 285–293. *
47. Brester Ch., Semenkin E. 'Cooperative Multi-objective Genetic Algorithm with Parallel Implementation' // Advances in Swarm and Computational Intelligence, LNCS 9140, 2015, pp. 471–478.
48. Akhmedova Sh., Semenkin E. 'Co-operation of Biology-Related Algorithms for Constrained Multiobjective Optimization' // Advances in Swarm and Computational Intelligence, LNCS 9140, 2015, pp. 487–494.
49. Semenkina M., Semenkin, E. 'Hybrid Self-Configuring Evolutionary Algorithm for Automated Design of Fuzzy Classifier' // Advances in Swarm Intelligence. - Y. Tan et al. (Eds.): ICSI 2014, Part 1, LNCS 8794, 2014. – P. 310-317.
50. Stanovov, V., Semenkin, E., Semenkina, O. Instance selection approach for self-configuring hybrid fuzzy evolutionary algorithm for imbalanced datasets // Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics) Volume 9140, 2015, Pages 451-459
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52. Zaloga, A., Burakov, S., Semenkin, E., Yakimov, I., Akhmedova, S., Semenkina, M., Sopov, E. On the application of co-operative swarm optimization in the solution of crystal structures from x-ray diffraction data // Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), Volume 9140, 2015, Pages 89-96.
53. Semenkin, E., Semenkina, M. 'Stochastic Models and Optimization Algorithms for Decision Support in Spacecraft Control Systems Preliminary Design' // Informatics in Control, Automation and Robotics, Lecture Notes in Electrical Engineering, 2014, vol. 283, pp 51-65.
54. Akhmedova Sh., Semenkin E. 'Data Mining Tools Design with Co-operation of Biology Related Algorithms' // Advances in Swarm Intelligence. - Y. Tan et al. (Eds.): ICSI 2014, Part 1, LNCS 8794, 2014. – P. 499-506. *
55. Semenkina, M., Semenkin, E. Hybrid self-configuring evolutionary algorithm for automated design of fuzzy classifier // Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), Volume 8794, 2014, Pages 310-317.
56. Ryzhikov I., Semenkin E. 'Evolutionary strategies algorithm based approaches for the linear dynamic system identification' // Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics). Volume 7824 LNCS, 2013, Pages 477-484.
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(including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), Volume 7928 LNCS, Issue PART 1, 2013, Pages 467-477.

59. Semenkin E., Semenkina M., Panfilov I. 'Neural network ensembles design with self-configuring genetic programming algorithm for solving computer security problems' // Advances in Intelligent Systems and Computing. 2013. T. 189. – P. 25-32.

60. Semenkin E., Semenkina M. 'Self-configuring genetic algorithm with modified uniform crossover operator' // Advances in Swarm Intelligence. Lecture Notes in Computer Science, vol. 7331, pp. 414-421, 2012. *

61. Sergienko, R., Semenkin, E. Multistep fuzzy classifier forming with cooperative-competitive co-evolutionary algorithm // Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), Volume 7331 LNCS, Issue PART 1, 2012, Pages 452-459.

62. Shabalov, A., Semenkin, E., Galushin, P. Integration of intelligent information technologies ensembles for modeling and classification // Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), Volume 7208 LNAI, Issue PART 1, 2012, Pages 365-374.

63. Bukhtoyarov, V., Semenkin, E., Shabalov, A. Neural networks ensembles approach for simulation of solar arrays degradation process // Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), Volume 7208 LNAI, Issue PART 1, 2012, Pages 186-195.

III. Papers published in peer-reviewed conference proceedings (indexed in Web of Science and Scopus)

64. Stanovov, V., Akhmedova, S., Semenkin, E. Genetic algorithm with success history based parameter adaptation, 2019 - IJCCI 2019 - Proceedings of the 11th International Joint Conference on Computational Intelligence, pp. 180-187.

65. Stanovov, V., Akhmedova, S., Semenkin, E., Semenkina, M. Generalized Lehmer mean for success history based adaptive differential evolution, 2019 - IJCCI 2019 - Proceedings of the 11th International Joint Conference on Computational Intelligence, pp. 93-100.

66. Brester, C., Stanovov, V., Voutilainen, A., Semenkin, E., Kolehmainen, M. Evolutionary fuzzy logic-based model design in predicting coronary heart disease and its progression, 2019 - IJCCI 2019 - Proceedings of the 11th International Joint Conference on Computational Intelligence, pp. 360-366.

67. Stanovov, V., Akhmedova, S., Semenkin, E. Automatic Design of Fuzzy Controller for Rotary Inverted Pendulum with Success-History Adaptive Genetic Algorithm, 2019 - 2019 International Conference on Information Technologies, InfoTech 2019 – Proceedings, 8860874.

68. Stanovov, V., Akhmedova, S., Semenkin, E. Selective pressure in constrained differential evolution, 2019 – GECCO 2019 Companion - Proceedings of the 2019 Genetic and Evolutionary Computation Conference Companion, pp. 83-84.

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70. Stanovov V., Akhmedova Sh., Semenkin E. LSHADE Algorithm with Rank-Based Selective Pressure Strategy for Solving CEC 2017 Benchmark Problems, 2018 Proceedings of the IEEE Congress on Evolutionary Computation, Pages 757-764, 2018. *

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72. Sopov E., Vakhnin A., Semenkin E. On Tuning of Group Sizes in the Random Adaptive Grouping Algorithm for large-Scale Global Optimization Problems // Proceedings of the 2018 International Conference on Applied Mathematics and Computational Science, Budapest, Hungary, October 6-8, 2018.
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75. Stanovov, V., Akhmedova, S., Semenkin, E. Solving the global trajectory optimization problem with archive-based differential evolution // 2018 International Conference on Information Technologies, InfoTech 2018 – Proceedings.
76. Akhmedova, S., Semenkin, E., Stanovov, V. Semi-supervised SVM with fuzzy controlled cooperation of biology related algorithms // ICINCO 2017 - Proceedings of the 14th International Conference on Informatics in Control, Automation and Robotics, vol. 1, pp. 64-71.
77. Ryzhikov, I., Brester, C., Semenkin, E. Multi-objective dynamical system parameters and initial value identification approach in chemical disintegration reaction modelling // ICINCO 2017 - Proceedings of the 14th International Conference on Informatics in Control, Automation and Robotics, vol. 1, pp. 47-504.
78. Semenkin, M., Akhmedova, S., Semenkin, E. Nonlinguistic information extraction by semi-supervised techniques // ICINCO 2017 - Proceedings of the 14th International Conference on Informatics in Control, Automation and Robotics, vol. 1, pp. 312-317.
79. Škraba, A., Koložvari, A., Kofjač, D., Stojanović, R., Stanovov, V., Semenkin, E. Prototype of group heart rate monitoring with NODEMCU ESP8266 // 2017 6th Mediterranean Conference on Embedded Computing, MECO 2017 - Including ECYPS 2017, Proceedings.
80. Ryzhikov I., Semenkin E., Sopov E. A meta-heuristic for improving the performance of an evolutionary optimization algorithm applied to the dynamic system identification problem // IJCCI 2016 - Proceedings of the 8th International Joint Conference on Computational Intelligence. 2016. – P. 178-185.
81. Semenkin M., Akhmedova S., Brester C., Semenkin E. ‘Choice of spacecraft control contour variant with self-configuring stochastic algorithms of multi-criteria optimization’ // ICINCO 2016 - Proceedings of the 13th International Conference on Informatics in Control, Automation and Robotics. 2016, vol. 1 – P. 281-286.
82. Ryzhikov I., Semenkin E., Panfilov I. Evolutionary optimization algorithms for differential equation parameters, initial value and order identification // ICINCO 2016 - Proceedings of the 13th International Conference on Informatics in Control, Automation and Robotic, vol 1, 2016. – P. 168-176.
83. Sergienko, R., Kamshilova, I., Semenkin, E., Schmitt, A. Weighted voting of different term weighting methods for natural language call routing // ICINCO 2016 - Proceedings of the 13th International Conference on Informatics in Control, Automation and Robotic, vol. 1, 2016. – P. 38-46.
84. Skraba, A., Stanovov, V., Semenkin, E., Koložvari, A., Stojanovic, R., Kofjac, D. Putting cloud 9 IDE on the wheels for programming Cyber-Physical / Internet of Things Platforms: Providing educational prototypes // ICINCO 2016 - Proceedings of the 13th International Conference on Informatics in Control, Automation and Robotic, vol. 2, 2016. – P. 428-435.

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91. Akhmedova, Sh., Semenkin, E. Co-Operation of Biology Related Algorithms for Multi-Objective Binary Optimization // // 2015 IIAI 4th International Congress On Advanced Applied Informatics (IIAI-AAI), pp. 580-585.
92. Semenkina, M., Semenkin, E. Memetic Self-Configuring Genetic Programming for Solving Machine Learning Problems // 2015 IIAI 4th International Congress On Advanced Applied Informatics (IIAI-AAI), pp. 599-604. *
93. Stanovov, V., Sopov, E., Semenkin, E. Multi-strategy Multimodal Genetic Algorithm for Designing Fuzzy Rule Based Classifiers // 2015 IEEE Symposium Series On Computational Intelligence (IEEE SSCI), pp. 167-173.
94. Akhmedova, Shakhnaz; Semenkin, E. Co-operation of Biology Related Algorithms for Multiobjective Optimization Problems // International Conference On Computer Science And Artificial Intelligence (ICCSAI 2014), pp. 212-215. *
95. Brester, Ch., Semenkin, E., Sidorov, M. Speech-based Emotion Recognition: Application of Collective Decision Making Concepts // International Conference on Computer Science and Artificial Intelligence (ICCSAI 2014), pp. 216-220.
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97. Stanovov V., Sopov E., Semenkin E. Multi-strategy multimodal genetic algorithm for designing fuzzy rule based classifiers // Computational Intelligence, 2015 IEEE Symposium Series on, 167-173.
98. Akhmedova, S., Semenkin, E. ANN-based classifiers automatically generated by new multi-objective bionic algorithm // ICINCO 2015 - Proceedings of the 12th International Conference on Informatics in Control, Automation and Robotics, vol. 1, pp. 310-317.
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101. Sergienko, R., Akhtiamov, O., Semenkin, E., Schmitt, A. A novel approach to neural network design for natural language call routing // ICINCO 2015 - Proceedings of the 12th International Conference on Informatics in Control, Automation and Robotics, vol. 1, pp. 102-109.
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108. Akhmedova Sh., Semenkin E. 'Co-operation of Biology Related Algorithms meta-heuristic in ANN-based classifiers design' // Evolutionary Computation (CEC), 2014 IEEE Congress on, pp. 867-872.
109. Semenkin, E., Semenkina, M. 'Stochastic Models and Optimization Algorithms for Decision Support in Spacecraft Control Systems Preliminary Design' // Informatics in Control, Automation and Robotics, Lecture Notes in Electrical Engineering, 2014, vol. 283, pp 51-65.
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