Alexander Lazarev

Born on 22nd March 1958.
Russian nationality.
Married, 3 children.

The head of laboratory, Professor,
Institute of Control Sciences of Russian Academy of Sciences.

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Education & Diplomas

- **Dr. Hab.**, The discrete mathematics and mathematical cybernetics, Computing Centre of Russian Academy of Sciences, Moscow, Russia, 2008.
- **Ph.D.** The discrete mathematics and mathematical cybernetics, 1991, Moscow.
- **M.Sc.** The applied mathematics (with Honors), Kazan State University, Kazan, Russia (USSR), 1980.

Research Interests

- **Discrete optimization:** combinatory problems**,** modeling, decomposition algorithms, applications to production planning and scheduling.
- **Constraint Programming:** combining with Integer Programming, applications to scheduling.
- **Scheduling:** complexity, exact and approached methods, practical scheduling problems, parallel calculations .

Professional Memberships

- Institute of Control Sciences of Russian Academy of Sciences, www.ipu.ru;
- Member of an editorial board of journal Automatic & Remote Control, ait.mtas.ru;
- Reviewer of Mathematical Review (USA);
- The invited editor of journal Computers and Operation Research, Elsevier;
- Member of the European committee on combinatory optimization, ECCO, www.eccoxxiii.com/
- Editor of "Operation research" Review "Mathematics" (Russia), www2.viniti.ru/

Publications

Books

- Lazarev A.A., Siraev R. R. Processing Systems of the economic information. Part I. Crediting in bank.// Kazan, Publishing house of the Kazan mathematical society, 1998. - 285 p.

- Lazarev A.A., Gafarov E.R. Scheduling Theory. Minimization of total tardiness for single machine.//Scientific edition. Computer centre of the Russian Academy of Sciences - 2006. - 134 p.

- Lazarev A.A., Gafarov E.R. Scheduling Theory. Resource-Constrained Project Scheduling Problems.//Scientific edition. Computer centre of the Russian Academy of Sciences - 2007. - 80 p.

- Lazarev A.A., Sadykov R. R Scheduling Theory. Minimization maximum lateness and total weighed number tardy jobs.//Scientific edition. Computer centre of the Russian Academy of Sciences - 2007. - 135 p.

- Lazarev A.A Scheduling Theory. Estimations of absolute errors and the scheme of the approached solution of scheduling problems.// Scientific and teaching edition.. - Moscow physicotechnical institute, - 2008. - 222 p.

- Lazarev A.A., Gafarov E.R., Scheduling Theory. Problems and algorithms.// Scientific and teaching edition.. - Moscow State University, - 2011. - 223 p.

- Lazarev A.A., Musatova E.G., Gafarov E.R., Kvaratshelia A.G. Scheduling Theory. Railway planning.// Moscow, Institute of Control Sciences, 2012, 92 p.

- Lazarev A.A., Gafarov E.R. Scheduling Theory. Total tardiness for single machine.// Saarbrücken: LAP LAMBERT Academic Publishing GmbH & Co. KG, 2011. – 87 c.

International Journals

- A.A. Lazarev, R.R. Sadykov, S.V. Sevastyanov. "A scheme of approximation solution of problem1$|r_j|L_{\max}$", ***Journal of Applied and Industrial Mathematics*, 1(4):468–480, 2007.** DOI: 10.1134/S1990478907040102
- A. A. Lazarev. The Pareto-Optimal Set of the NP-Hard Problem of Minimization of the Maximum Lateness for a Single Machine//**Journal of Computer and Systems Sciences International. -- 2006.** -- Vol. 45, No. 6. -- P. 943–-949.
- A. A. Lazarev. Estimation of Absolute Error in Scheduling Problems of Minimizing the Maximum Lateness// **Doklady Mathematics. -- 2007.** -- Vol. 76, No. 1. -- P. 572–-574

- A. A. Lazarev. Solution of the NP-Hard Total Tardiness Minimization Problem in Scheduling Theory// **Computetional Mathematics and Mathematical Physics. -- 2007**. -- Vol. 47, No. 6. -- P. 1039–-1049
- A. A. Lazarev. Graphic Approach to Combinatorial Optimization// **Automation and Remote Control. -- 2007.** -- Vol. 68, No. 4. -- P. 583–-592
- A. A. Lazarev, A. G. Kvaratskheliya, and E. R. Gafarov. Algorithms for Solving the NP-Hard Problem of Minimizing Total Tardiness for a Single Machine // **Doklady Mathematics. -- 2007.** -- Vol. 75, No. 1. -- P. 130–-133
- E.R. Gafarov and A. A. Lazarev. A Special Case of the Single-Machine Total Tardiness Problem is NP-Hard//**Journal of Computer and Systems Sciences International. -- 2006**. -- Vol. 45, No. 3. -- P. 450–-458
- Cheng T.C.E., Lazarev A.A., Gafarov E.R. A Hybrid Algorithm for the Single-Machine Total Tardiness Problem// **Computres & Operations Research.-- 36, 2009**, P. 308 -- 315. (http://dx.doi.org/10.1016/j.cor.2007.10.002)
- Lazarev A.A. Estimates of the Absolute Error and a Scheme for an Approximate Solution to Scheduling Problems.// ***Computational Mathematics and Mathematical Physics, 2009,*** *Vol. 49, No. 2, pp. 373–386.* http://www.springerlink.com/content/ap27w7385w4j3744/fulltext.pdf
- A. A. Lazarev and E. R. Gafarov. On Project Scheduling Problem// ***Automation and Remote Control.--*** **Vol. 69, N. 12, 2008.** – P. 2070-2088. **DOI:** 10.1134/S0005117908120060
- A. A. Lazarev and E. R. Gafarov. Transformation of the Network Graph of Scheduling Problems with Precedence Constraints to a Planar Graph// ***Doklady Mathematics.*** **Vol. 79, No. 1, 2009.** – P. 1-4. DOI: 10.1134/S1064562409010013
- Lazarev A.A., Werner F. Algorithms for specialcases of the single machine total tardiness problem and an application to the even-odd partition problem. **Mathematical and Computer Modelling, Elsevier, 2009.** Vol. 49, N 9-10, P. 2061-2072.
- Lazarev A.A., Werner F. A graphical realization of the dynamic programming method for solving NP-hard combinatorial problems. **Computers and Mathematics with Applications, Elsevier, 58 (2009)** 619--631.
- Gafarov E.R., Lazarev A.A., and Werner F., Algorithms for Some Maximization Scheduling Problems on a Single Machine//**Automation and Remote Control, Vol. 71, 10, (2010),** p. 2070--2084.
- Lazarev A.A. and Kvaratskhelia A.G., Properties of Optimal Schedules for the Minimization Total Weighted Completion Time in Preemptive Equal-length Job with Release Dates Scheduling Problem on a Single Machine//**Automation and Remote Control, Vol. 71, 10, (2010),** p. 2085--2092.
- E.R. Gafarov, A.A. Lazarev, F. Werner, Single machine scheduling problems with financial resource constraints: some complexity results and properties// **Mathematical Social Sciences, 62 (2011)**, 7-13.
- E.R. Gafarov, A.A. Lazarev, F. Werner, Transforming a pseudo-polynomial algorithm for the single machine total tardiness maximization problem into a polynomial one// **Annals of Operations Research (2012)** DOI 10.1007/s10479-011-1055-4
- E.R. Gafarov, A.A. Lazarev, F. Werner, A Note on a Single Machine Scheduling Problem with Generalized Total Tardiness Objective Function// **Information Processing Letters. 2011**. DOI: 10.1016/j.ipl.2011.10.1013; published online. http://www.sciencedirect.com/science?_ob=ArticleListURL&_method=list&_ArticleListID=1849808165&_sort=r&_st=13&view=c&_acct=C000228598&_version=1&_urlVersion=0&_userid=10&md5=9d78eb57f43a7e7dab5822158441bb0d&searchtype=a.
- Lazarev A.A., Salnikov A.M., Baranov A.V. Graphical Algorithm for the Knapsack Problem// Proceedings of the 11th International Conference on Parallel Computing Technologies, PaCT 2011, Kazan, Russia. Heidelberg: Springer-Verlag Berlin 2011. Volume 6873, DOI: 10.1007/978-3-642-23178-0. P. 459-466.

Four pupils have protected PhD (Shulgina, Sadykov, Kvaratskhelia, Gafarov)

Teaching

The discrete analysis (algebra of logic, graph theory, combination theory), scheduling theory (algorithmic approach), Imitating modeling, Methods of optimization:

Moscow Lomonosov State University;
Moscow physic technical institute (State University);
High School of Economy (State University).

Organized conferences

INCOM'09 - http://www.incom09.org/

Languages

- English good knowledge.
- Russian native speaker.

Date of preparation: May 30, 2012