

**Dr. Artem Baklanov**

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**Main areas of research**

- Theoretical study of Nash equilibria in repeated games.
- Application of control theory, game theory, and machine learning to inform environmental decision making.

**Description of academic career and positions held to date**

**EDUCATION**

2004-2009: Automation Engineer, Department of Radioelectronics and Information Technologies, Ural Federal University (Yekaterinburg, Russia); *Diploma Summa Cum Laude*.

2009-2013: Post-graduate education, N.N. Krasovskii Institute of Mathematics and Mechanics of the Ural Branch of the Russian Academy of Sciences (Yekaterinburg, Russia).

June 19; 2013: Defence of PhD theses «Extension of open-loop maximin problems in the class of finitely additive measures» at N.N. Krasovskii Institute of Mathematics and Mechanics.

**PROFESSIONAL EXPERIENCE**

2010-2013: Research assistant, Department of Control Systems, N.N. Krasovskii Institute of Mathematics and Mechanics (Yekaterinburg, Russia).

2012-2014: Lecturer, Ural Federal University (Yekaterinburg, Russia).

2013-2014: Research Scholar, Department of Control Systems, N.N. Krasovskii Institute of Mathematics and Mechanics (Yekaterinburg, Russia).

2014-2016: Postdoctoral Research Scholar, International Institute for Applied Systems Analysis, (Laxenburg, Austria).

2016-2018: Research Scholar, International Institute for Applied Systems Analysis (Laxenburg, Austria).

2018 - now: Postdoc, Higher School of Economics (St Petersburg, Russia)

**Most important peer review activities, editorships and/or memberships in academic organizations**

Reviewer in *Games* journal;

Program committee member of International Conference “*Analysis of Images, Social networks and Texts*”

in 2016, 2017, 2018;

Reviewer of international conferences “*Optimization and Applications*” (OPTIMA - 2017) and “*Discrete Optimization and Operations Research*” (DOOR - 2016).

#### **Most important research projects funded in the past**

Principal Investigator (PI), “Development of methods for solving game-theoretic problems and analysis of economic models based on extension constructions and the maximum principle”, funded by the Russian Foundation for Basic research, project #16-31-00177 in 2016-2017. Total funding: 900,000 rubles.

Co-PI, “Methods and algorithms for constructing optimal routes for controlled systems visiting given sets of points”, funded by the Russian Foundation for Basic research, project # 14-08-00419 in 2014-2016. Total funding: 1,650,000 rubles.

#### **Participation in conferences/workshops in the last 5 years (2014-2018)**

5th International Conference on Computer Science, Applied Mathematics and Applications (ICCSAMA 2017), 30 June — 1 July, **2017**, Berlin, Germany;

International Conference on Mathematical Control Theory and Mechanics, 7-11 July, **2017**, Suzdal, Russia;

8th International Conference on Physics and Control (PhysCon 2017), 17-19 July, **2017**, Florence, Italy;

7th International Conference on Optimization Methods and Applications (OPTIMA), 25 Sep-2 Oct, **2016**, Petrovac, Montenegro;

5th World Congress of the Game Theory Society (GAMES 2016), 24-28 July, **2016**, Maastricht, Netherlands: “Nash equilibria in reactive strategies”;

International conference in memory of Academician Arkady Kryazhimskiy, 3-8 October, **2016**, Yekaterinburg, Russia: “Nash equilibria in reactive strategies”;

4th International Conference on Computer Science, Applied Mathematics and Applications (ICCSAMA-2016), 2-3 May, **2016**, Vienna, Austria;

5th International Conference on Analysis of Images, Social Networks and Texts (AIST), April 7-9, **2016**, Yekaterinburg, Russia;

6th International Conference on Optimization Methods and Applications (OPTIMA), 27 Sep-3 Oct, **2015**, Petrovac, Montenegro;

International Conference 'European Meeting on Game Theory' (SING11-GTM2015), July 08-10, **2015**, St. Petersburg University, Russia: "Nash equilibria in reactive strategies";

#### **Without talk**

Workshop "Axiomatizations in Game Theory", 1-2 Sep, **2017**, Pécs, Hungary;

International Conference "Advances in Fair Division", 9-11 August, **2017**, Saint Petersburg, Russia;

International Summer School "Fair Division: Between Economics, Mathematics and Computer Science", 7-8 August, **2017**, Saint Petersburg, Russia;

European Geosciences Union (EGU) General Assembly 2016, 17–22 April, **2016**, Vienna, Austria;

Systems Analysis 2015 - A Conference in Celebration of Howard Raiffa, 11 -13 Nov., **2015**, Laxenburg, Austria.

#### **List of publications in the last 5 years (2014-2018)**

##### **Peer-reviewed**

1. Averboukh Y. & **Baklanov A.** (2014). Stackelberg solutions of differential games in the class of nonanticipative strategies. *Dynamic Games and Applications* 1 (4): 1-9. DOI: 10.1007/s13235-013-0077-8
2. Baklanov A. (2017). On a density property of weakly absolutely continuous measures. General case. *Izvestiya Instituta Matematiki i Informatiki* 2 (50): 3-12 (in Russian). <http://pure.iiasa.ac.at/15046/>
3. Baklanov A. (2016). On density properties of weakly absolutely continuous measures. *CEUR Workshop Proceedings* (1662): 62-72 (in Russian). <http://pure.iiasa.ac.at/13832/>
4. Baklanov A., Chentsov A., & Savenkov I. (2017). On reachable sets for one-pulse controls under constraints of asymptotic character. *Cybernetics and Physics* 4 (6): 166-173. <http://pure.iiasa.ac.at/14997/>
5. Baklanov A. & Chentsov P. (2017). A heuristic algorithm for the double integrator traveling salesman problem. *CEUR Workshop Proceedings* (1894): 203-208. <http://ceur-ws.org/Vol-1894/mpr1.pdf>
6. Baklanov A., Fritz S., Khachay M., Nurmukhametov O., & See L. (2016). The Cropland Capture Game: good annotators versus vote aggregation methods. *Advances in Intelligent Systems and Computing* (453): 167-180. DOI:10.1007/978-3-319-38884-7\_13

7. Baklanov A., Fritz S., Khachay M., Nurmukhametov O., Salk C., & Shchepashchenko D. (2016). Votes Aggregation Techniques in Geo-Wiki Crowdsourcing Game: a Case Study. *Communications in Computer and Information Science* (661): 41-50. DOI: 10.1007/978-3-319-52920-2\_4
8. Chentsov A., **Baklanov A.**, & Savenkov I. (2017). On control problem with constraints of asymptotic character. In: *Proceedings of 8th International Conference on Physics and Control (PhysCon 2017)*. Organized by International Physics and Control Society (IPACS). <http://pure.iiasa.ac.at/14997/>
9. Chentsov A., **Baklanov A.**, Savenkov I. (2016) A problem of attainability with constraints of asymptotic nature. *Izvestiya Instituta Matematiki i Informatiki* 1(47): 54-118 (in Russian). <http://mi.mathnet.ru/eng/iimi328>
10. Chentsov A.G. & **Baklanov A.P.** (2015). On the question of construction of an attraction set under constraints of asymptotic nature. *Proceedings of the Steklov Institute of Mathematics* (291, Suppl. 1): 40-55. DOI:10.1134/S0081543815090035
11. Chentsov A.G. & **Baklanov A.P.** (2015). On an asymptotic analysis problem related to the construction of an attainability domain. *Proceedings of the Steklov Institute of Mathematics* 1 (291): 279-298. DOI:10.1134/S0081543815080222
12. Chentsov, A.G. & **Baklanov, A.P.** (2014). A problem related to asymptotic attainability in the mean. *Doklady Mathematics* 3 (90): 762-765. DOI:10.1134/S1064562414070333
13. Nurmukhametov O. & **Baklanov A.** (2016). A method for increasing the accuracy of image annotating in crowd-sourcing. *CEUR Workshop Proceedings* (1662): 206-214 (in Russian). <http://pure.iiasa.ac.at/13833/>
14. Rekabsaz N., Lupu M., **Baklanov A.**, Hanbury A., Duer A., & Anderson L. (2017). Volatility Prediction using Financial Disclosures Sentiments with Word Embedding-based IR Models. In: *Proceedings of the 55th Annual Meeting of the Association for Computational Linguistics*: 1712-1721. DOI:10.18653/v1/P17-1157
15. Subkhankulova D., **Baklanov A.**, & McCollum D. (2017). Demand Side Management: A Case for Disruptive Behaviour. *Advances in Intelligent Systems and Computing* (629): 47-59. DOI:10.1007/978-3-319-61911-8\_5

### **Non-peer-reviewed**

Baklanov A. (2017). On extension constructions for control problems with “fuel” constraints. In: *Abstracts of the International conference on Mathematical Control Theory and Mechanics*: 26.

Baklanov A. (2016). Nash equilibria in reactive strategies. In: *Abstracts of the 5th World Congress of the Game Theory Society, GAMES 2016*.

Baklanov A. (2016). Nash equilibria in reactive strategies. In: Abstracts of the International conference "Systems Analysis: Modeling and Control": 22-23. <http://pure.iiasa.ac.at/14173/>

Baklanov A., Chentsov P., Gornov A., & Zarodnyuk T. (2016). A benchmark of heuristic algorithms for the double integrator traveling salesman problem. In: Abstracts of VII International Conference on Optimization Methods and Applications (OPTIMA-2016): 26-27.

Baklanov A., Fritz S., Khachay M., Nurmukhametov O., Salk C., See L., and Shchepashchenko D. (2016). Improved vote aggregation techniques for the Geo-Wiki Cropland Capture crowdsourcing game. In: Abstracts of European Geosciences Union (EGU) General Assembly. <http://pure.iiasa.ac.at/12611/>

Baklanov A. (2014). On question about representation of attraction sets in an impulse control problem. Applied Mathematical Sciences 10 (8): 493-7. DOI: 10.12988/ams.2014.312691

Baklanov A. (2014). A Density Property of Finitely Additive Measures. Int. Journal of Math. Analysis 7 (8): 301-5. DOI: 10.12988/ijma.2014.419