

# Anton Baykalov

## Curriculum Vitae

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### Education

2017–2021 **PhD in Mathematics**, *The University of Auckland, New Zealand*.

Supervisors Professor Eamonn O'Brien & Associate Professor Jianbei An

Thesis Intersection of conjugate solvable subgroups in finite classical groups

Description In this thesis I solve Problem 17.41 from [Kourovka notebook](#) for the case of almost simple group  $G$  with the socle isomorphic to  $L_n(q)$ ,  $U_n(q)$  or  $PSp_n(q)'$ .

2014–2016 **Master of Mathematics and Computer Science**, *Novosibirsk State University, Russia*.

Supervisor Professor Evgeny Vdovin

Thesis Intersection of conjugate solvable subgroups in finite groups

Description In this thesis I solve Problem 17.41 from [Kourovka notebook](#) for the case of almost simple group  $G$  with the socle isomorphic to  $A_n$ .

2010–2014 **Bachelor of Mathematics with thesis**, *Novosibirsk State University, Russia*.

Supervisor Professor Evgeny Vdovin

Thesis Intersection of conjugate nilpotent subgroups of solvable group

Description In this thesis I proved that if  $G$  is a finite group,  $F(G)$  is its Fitting subgroup,  $N$  is a nilpotent subgroup of  $G$  and  $G/F(G)$  is nilpotent, then there exist  $x, y \in G$  such that  $N \cap N^x \cap N^y \leq F(G)$ . Later the same year Zenkov proved a more general [statement](#), so my work was never published.

### Publications

2024 Anton A. Baykalov, Alice Devillers and Cheryl E. Praeger. *Proper partial linear spaces affording imprimitive rank 3 automorphism groups*, in preparation

2024 Anton A. Baykalov. *Base sizes for finite orthogonal groups with solvable stabilisers*, in preparation

2024 Anton A. Baykalov. *Base sizes for finite unitary and symplectic groups with solvable stabilisers*, under review in the International Journal of Algebra and Computation

2024 Anton A. Baykalov. *On algebraic normalisers of maximal tori in simple groups of Lie type*, Journal of Group Theory, 2024 (published online ahead of press) <https://doi.org/10.1515/jgth-2023-0070>

2023 Anton A. Baykalov. *Base sizes for finite linear groups with solvable stabilisers*, under review in the Journal of Group Theory, <https://doi.org/10.48550/arXiv.2408.08510>

- 2023 Anton A. Baykalov, Alice Devillers and Cheryl E. Praeger. *Rank three innately transitive permutation groups and related 2-transitive groups*, **Innov. Incidence Geom.** 20(2023), no.2-3, 135–175. <https://doi.org/10.2140/iig.2023.20.135>
- 2021 Anton A. Baykalov. *Intersection of conjugate solvable subgroups in finite classical groups*. **PhD Thesis**, The University of Auckland. <https://arxiv.org/abs/1703.00124>
- 2017 Anton Baiklov. *Intersection of conjugate solvable subgroups in symmetric groups*. **Algebra Logic** 56, 87–97 (2017). <https://doi.org/10.1007/s10469-017-9431-z>

## Work experience

- June 2023 – present time Research Associate, Department of Mathematics and Statistics, The University of Western Australia.
- Jan – June, 2023 Temporary Lecturer, Department of Mathematics, The University of Auckland.
- Jan – June, 2022 Research Assistant, The University of Auckland. Preparing MAGMA packages for computing representatives of conjugacy classes of finite simple groups of Lie type  $G_2$  and  $F_4$  together with Professor Eamonn O'Brien.

## Teaching experience

- 2023 Teaching the course **MATHS 254** (Fundamental Concepts of Mathematics) at the University of Auckland
- 2021 Teaching the course **MATHS 326** (Combinatorics) at the University of Auckland
- 2019 Tutoring for the course **MATHS 120** (an introduction to linear algebra) at the University of Auckland
- 2016–2017 Tutoring for the Algebra course (linear algebra and introduction to groups, rings and other algebraic structures) at Novosibirsk State University
- 2010–2016 Teaching Olympiad mathematics and related topics to middle-school and high-school students on various summer schools and in school math clubs in Novosibirsk including four semesters (2014–2016) of teaching twice a week in Novosibirsk math club "Sov'onok."

## Academic service roles

- July 2023 – present time Convenor for the Groups and Combinatorics seminar, Department of Mathematics and Statistics, The University of Western Australia

## Languages

- Russian **Mother tongue**  
English **Fluent**