CURRICULUM VITAE

(as of December 14, 2023)

Ergün Yalçın

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Education

1993-1998	Ph.D. in Mathematics, University of Wisconsin-Madison, USA (Advisor: Alejandro Adem)
1989-1993	B.S. in Electrical Engineering, Bilkent University, Turkey

Employment and Sabbatical Visits

2012 – now	Professor, Bilkent University, Turkey.
2014 – 2015	Sabbatical visit, McMaster University, Hamilton, Canada.
2007 – 2012	Associate Professor, Bilkent University, Turkey.
2007 – 2008	Sabbatical visit, McMaster University, Hamilton, Canada.
2000 – 2007	Assistant Professor, Bilkent University, Turkey.
1999 – 2000	Postdoctoral Fellow, McMaster University, Hamilton, Canada.
1998 – 1999	Visiting Lecturer, Indiana University, Bloomington, Indiana, USA.

Research Interests

General: Algebraic Topology, Group Theory, Homological Algebra. Specific: Cohomology of Groups, Group Actions on Topological Spaces, Functorial Methods in Representation Theory, Cohomology of Small Categories.

Awards and Honors

2013 – now	Member of the Science Academy Association, İstanbul.
2009	Masatoshi Gündüz İkeda Award, Türk Matematik Vakfı.
2007, 2014	Hooker Distinguished Visiting Professor Award, McMaster University, Hamilton, Canada.
2007	Tübitak Encouragement Award (Tübitak-Teşvik Ödülü), Turkish Scientific and Technical Research Council.
2005 – 2008	Distinguished Young Scientist Award (TÜBA-Gebip), Turkish Academy of Sciences.
1997 – 1998	Research Assistantship, University of Wisconsin-Madison (grant was used to visit the Max Plack Institute in Bonn for a semester).
1993 – 1994	TÜBİTAK-NATO Scholarship for Ph.D., Turkish Scientific and Technical Research Council.

Publications and Preprints

1. LHS-spectral sequences for regular extensions of categories, to appear in Journal of Homotopy and Related Structures, 2023.
2. (with H. Rüping and M. Stephan) Steenrod closed parameter ideals in the mod-2 cohomology of A_4 and $SO(3)$, Submitted, 2022.
3. Higher limits over the fusion orbit category, Adv. Math. **406** (2022), No. 108482, 69 pp.
4. (with M. Gelvin) Dade groups for finite groups and dimension functions, J. Algebra **576** (2021), 146–196.
5. (with M. Y. Kızmaz) Finite groups of rank two which do not involve $Qd(p)$, Proc. Amer. Math. Soc. **148** (2020), 3713–3721.
6. (with M. S. Gündoğan) Cohomology of infinite groups realizing fusion systems, Journal of Homotopy and Related Structures **14** (2019), 1103–1130.
7. (with O. Coşkun) Obstructions for gluing biset functors, J. Algebra **532** (2019), 268–310.
8. (with C. Okay) Dimension functions for spherical fibrations, Algebraic & Geometric Topology **18** (2018), 3907–3941.
9. (with S. P. Reeh) Representation rings for finite fusion systems and dimension functions, Math. Z. **288** (2018), 509–530.
10. Equivariant Moore spaces and the Dade group, Adv. Math. **309** (2017), 209–237.
11. (with I. Hambleton) Group actions on spheres with rank one prime power isotropy, Math. Res. Letters **24** (2017), 379–400.
12. Rank Three p-group actions on products of spheres, Bull. London Math. Soc. **48** (2016), 325–340.
13. (with I. Hambleton) Group actions on spheres with rank one isotropy, Trans. Amer. Math. Soc. **368** (2016), 5951–5977.
14. (with M. Gelvin and S. P. Reeh) On the basis of the Burnside ring of a fusion system, J. Algebra **423** (2015), 767–797.
15. (with I. Hambleton) Homotopy representations over the orbit category, Homology Homotopy Appl. **16** (2014), 345–369.
16. (with S. Pamuk) Relative group cohomology and the orbit category, Communications in Algebra **42** (2014), 3220–3243.
17. (with Ö. Ünlü) Constructing homologically trivial actions on products of spheres, Indiana Univ. Math. J. **62** (2013), 927–945.
18. (with O. B. Okutan) Free actions on products of spheres at high dimensions, Algebraic & Geometric Topology **13** (2013), 927–945.
19. (with Ö. Ünlü) Fusion systems and group actions with abelian isotropy subgroups, Proc. Edin. Math. Soc. **56** (2013), 873–886.
20. (with I. Hambleton and S. Pamuk) Equivariant CW-complexes and the orbit category, Comment. Math. Helv. **88** (2013), 369–425.
21. (with J. Pakianathan) Bockstein closed 2-group extensions and cohomology of quadratic maps, J. Algebra **357** (2012), 34–60.
22. (with Ö. Ünlü) Fusion systems and constructing free actions on products of spheres, Math. Z. **270** (2012), 939–959.
23. Productive elements in group cohomology, Homology Homotopy Appl. **13** (2011), 381–401.
24. (with I. Hambleton) Acyclic chain complexes over the orbit category, Münster J. of Mathe-

matics **3** (2010), 145–162.

25. (with Ö. Ünlü) Quasilinear actions on products of spheres, Bull. London Math. Soc. **42** (2010), 981–990.
26. (with A. Güçlükan İlhan) The Euler class of a subset complex, Quart. J. Math. **61** (2010), 43–68.
27. (with O. Coşkun) A Tate cohomology sequence for generalized Burnside rings, J. Pure and Appl. Algebra **213** (2009), 1306–1315.
28. A note on Serre's theorem in group cohomology, Proc. Amer. Math. Soc. **136** (2008), 2655–2663.
29. (with Y. Civan) Linear colorings of simplicial complexes and collapsing, J. Combin. Theory, Ser. A **114** (2007), 1315–1331.
30. (with J. Pakianathan) Quadratic maps and Bockstein closed group extensions, Trans. Amer. Math. Soc. **359** (2007), 6079–6110.
31. (with S. Bouc) Borel-Smith functions and the Dade group, J. Algebra **311** (2007), 821–839.
32. (with R. Hartmann) Generalized Burnside rings and group cohomology, J. Algebra **310** (2007), 917–944.
33. (with F. Altunbulak) A theorem of Jon F. Carlson on filtrations of modules, J. Pure and Appl. Algebra **208** (2007), 15–28.
34. An induction theorem for the unit groups of Burnside rings of 2-groups, J. Algebra **289** (2005), 105–127.
35. (with L. Barker) A new notion of rank for finite supersolvable groups and free linear actions on products of spheres, J. Group Theory **6** (2003), 347–364.
36. (with J. Pakianathan) On nilpotent ideals in the cohomology ring of a finite group, Topology **42** (2003), 1155–1183.
37. Set covering and Serre's theorem on the cohomology algebra of a p-group, J. Algebra **245** (2001), 50–67.
38. (with J. Pakianathan) On commuting and non-commuting complexes, J. Algebra **236** (2001), 396–418.
39. Free p-group actions on products of lens spaces, Proc. Amer. math. Soc. **129** (2001), 887–898.
40. Group actions and group extensions, Trans. Amer. Math. Soc. **352** (2000), 2689–2700.
41. (with A. Adem) On some examples of group actions and group extensions, J. Group Theory **2** (1999), 69–79.

Invited Talks (selected list)

1. "Homology decompositions for p-local finite groups", Princeton Topology Seminar, Online, April 2023.
2. "Higher limits over the fusion orbit category", Functorial Methods in Group Theory, Logis du Roy, Amiens, Conference in honor of Serge Bouc, Invited speaker, June 2022.
3. "Obstructions for gluing biset functors", Conference on the occasion of retirement of Serge Bouc, Online, Invited speaker, August 2021.
4. "The Dade group of a finite group and dimension functions", Séminaire de théorie des groupes d'Amiens, LAMFA, Université de Picardie-Jules Verne, France, Online, Nov. 2020.
5. "Dade groups for finite groups and dimension functions", Oberwolfach Workshop 2033,

Cohomology of Finite Groups: Interactions and Applications, Germany, Online, Aug. 2020.

6. "Cohomology of small categories and gluing problems", IMBM Mathematical Days 3, Invited Talk, Istanbul, Sept. 2019.

7. "On liranın üzerindeki formül", 31st National Math Symposium, Invited Public Lecture, Erzincan, Sept. 2018.

8. "Constructing free actions on products of spheres", International Conference on Manifolds, Groups and Homotopy, Isle of Skye, Scotland, Invited plenary speaker, June 2018.

9. "Kürelerin sonlu grup simetrileri", 29th National Math Symposium, Invited main speaker, Mersin, August 2016.

10. "Representation rings for fusion systems and dimension functions", Conference: Fusion systems and equivariant algebraic topology, Hausdorff Institute for Mathematics, Bonn, Germany, Invited talk, November 2016.

11. "Finite group actions on homotopy spheres", Advanced Lectures in Homotopy Theory (Series of three lectures), CRM, Barcelona, Spain, September 2016.

12. "Equivariant Moore spaces and the Dade group", Conference: Workshop on Group Actions-Classical and Derived, Toronto, Canada, June 2016.

13. "Homology decompositions for classifying spaces of finite groups", Models and Groups (Series of two lectures), IMBM, İstanbul, March 2016.

14. "On the basis of the Burnside ring of a fusion system", Workshop in honor of Serge Bouc on his 60th birthday, EPFL, Lausanne, Switzerland, Invited speaker, September 2015.

15. "Finite group actions on homotopy spheres", Geometry-Topology Seminar, University of Western Ontario, London, Canada, March 2015.

16. "Rank three p-group actions on products of spheres", Geometry-Topology Seminar, McMaster University, Hamilton, Canada, March 2015

17. "Finite group actions on homotopy spheres", Topology seminar at the University of British Columbia, Vancouver, Canada, March 2015.

18. "Constructing finite group actions on homotopy spheres", Topology Seminar, University of Rochester, Department of Mathematics, NY, USA, Oct. 2014.

19. "Constructing finite group actions on homotopy spheres", Geometry-Topology Seminar, McMaster University, Department of Mathematics, Hamilton, Canada, Sept. 2014.

20. "Finite group actions on spheres, McMaster University Colloquium (As part of Dr. Harry Lyman Hooker Distinguished Visiting Professor Award), Hamilton, Canada, Sept. 2014.

21. "Free actions on products of spheres at high dimensions", British Topology Meeting, Aberdeen, Scotland, Invited speaker, 2013.

22. "Free actions on products of spheres at high dimensions", Workshop on Group Actions and Homotopy Theory, Copenhagen, Denmark, 2013.

23. "Constructing free actions on products of spheres using left stable bisets", Conference on Bisets in Algebra and Topology, Amiens, France, Invited speaker, 2012.

24. "Productive elements in group cohomology and the rank conjecture", Workshop on Homotopical Approaches to Group Actions, Copenhagen, Denmark, 2011.

Courses Taught

Undergraduate Level: Calculus (101, 102, 111, 112), Linear Algebra (220, 223, 224, 227), Abstract Mathematics (123, 124), Advanced Calculus (213, 214), Differential Equations (240), Introduction to Probability (250), Topology (310), Algebra (323, 324), Discrete Mathematics (110, 132, 210), Number Theory (253).

Graduate Level: Algebra I, II (523, 524), Group Representations (525), Homological Algebra (625), Algebraic Topology I (611), Topics in Algebraic Topology I (618), Cohomology of Groups (626).

Professional Duties

2021-2022	President of the Turkish Mathematical Society
2019-2021	Member of the Editorial Board of the Bulletin of the Iranian Mathematical Society
2009-2014	Member of the Editorial Board of the Turkish Journal of Mathematics
2010, 2011	Member of the Scientific Committee of the National Mathematics Symposium
2011-2023	Member of Panels for Tübitak Grants (multiple times)
2000-2022	Member of the Organizing Committees for Antalya Algebra Days (main organizer 4 times)
2001, 2002	Organized Bilkent Algebra Days
2000-2023	Took part in the organization of the Bilkent Topology Seminar
2000-2022	Served on various committees in the department and for the university, including Hiring committee, Graduate admissions committee, Graduate student evaluation committee, University Open house organizing committee, University catalogue committee
2000-2022	Refereed papers for the following journals: Advances in Mathematics, Algebraic and Geometric Topology, Algebra and Number Theory, Archive der Math, Bulletin of London Mathematics Society, Filomat, Fundamenta Mathematicae, Homology, Homotopy and Applications, International Electronic Journal of Algebra, Journal of Algebra, Journal of Algebra and Computation, Journal of Algebras and Representation Theory, Journal of Combinatorial Theory, Ser. A, Journal of Group Theory, Journal of Homotopy, Homology and Applications, Journal of the Australian Mathematical Society, Mathematical Communications, Mathematische Annalen, Mathematische Nachrichten, Mexican Mathematical Bulletin, Pacific Journal of Mathematics, Proceedings of Edinburg Mathematical Society, Research in Mathematical Sciences, Topological Methods in Nonlinear Analysis, Turkish Journal of Mathematics.