

Personal Information

EMAIL akos@math.ucsb.edu
WEBSITE akosnagy.com
MAILING ADDRESS Department of Mathematics
South Hall, Room 6607
University of California
Santa Barbara, CA 93106-3080

Education

Ph.D. in Mathematics, Michigan State University, May 2016

Advisor: Thomas H. Parker

M.Sc. in Mathematics, Budapest University of Technology, July 2011

Advisor: András I. Stipsicz

M.Sc. in Physics, Budapest University of Technology, July 2010

Advisor: Gábor Etesi

Appointments

PRESENT

- Visiting Assistant Professor, University of California, Santa Barbara

Since July 1, 2020

Postdoc mentor: Xianzhe Dai

PAST

- William W. Elliott Assistant Research Professor, Duke University

January 1, 2018–June 30, 2020

Postdoc mentors: Mark A. Stern and Robert Bryant

- Fields Postdoctoral Fellow, Fields Institute

July 1, 2017–December 31, 2017

Postdoc mentor: Spiro Karigiannis

- Postdoctoral Fellow, University of Waterloo

July 1, 2016–June 30, 2017

Postdoc mentor: Benoit Charbonneau

OTHER

- Affiliate Researcher, Alfréd Rényi Institute of Mathematics, Hungarian Academy of Science

Since June 1, 2018–December 31, 2020

- Visitor, Universidade Federal Fluminense

November 27, 2019–December 10, 2019

- Visitor, Simons Center for Geometry and Physics

May 11, 2017–June 11, 2017

- Associate Postdoctoral Researcher, Perimeter Institute

July 1, 2016–June 30, 2017

Papers

ACCEPTED

- [5] Ákos Nagy and Gonçalo Oliveira: *From vortices to instantons on the Euclidean Schwarzschild manifold*

Communications in Analysis and Geometry

[ARXIV:1710.11535 | REFERENCE]

PUBLISHED

- [4] Ákos Nagy and Gonçalo Oliveira: *The Haydys monopole equation*

Selecta Mathematica 26, 58 (2020)

[ARXIV:1906.05432 | DOI.ORG/10.1007/s00029-020-00584-4]

- [3] Ákos Nagy: *Irreducible Ginzburg–Landau fields in dimension 2*

The Journal of Geometric Analysis, Volume 28, Issue 2, 1853–1868 (2018)

[ARXIV:1607.00232 | DOI:10.1007/s12220-017-9890-4]

- [2] Ákos Nagy: *The Berry connection of the Ginzburg–Landau vortices*
Communications in Mathematical Physics, **350(1)**, 105–128 (2017)
 [ARXIV:1511.00512 | DOI:10.1007/s00220-016-2701-0]
- [1] Gábor Etesi and Ákos Nagy: *S-duality in Abelian gauge theory revisited*
Journal of Geometry and Physics **61**, 693–707 (2011)
 [ARXIV:1005.5639 | DOI:10.1016/J.GEOMPHYS.2010.12.007]

SUBMITTED

- Daniel Fadel, Ákos Nagy, and Gonçalo Oliveira: *The asymptotic geometry of G_2 -monopoles*
 [ARXIV:2009.06788]
- Ákos Nagy and Gonçalo Oliveira: *The Kapustin–Witten equations on ALE and ALF Gravitational Instantons*
 [ARXIV:1906.05435]

IN PREPARATION

- Anuk Dayaprema, Benoit Charbonneau, Christopher Lang, Ákos Nagy, and Haoyang Yu: *Construction of BPS monopoles with continuous symmetries via the Nahm transform*
- Ákos Nagy: *Conjugate linear deformations of Dirac operators and concentrating Majorana spinors in Jackiw–Rossi type theories*
- Benoit Charbonneau and Ákos Nagy: *The Nahm transform of BPS monopoles with non-maximal symmetry breaking*

Invited talks

FUTURE

36. University of Saskatchewan, PIMS Applied Mathematics Seminar, March 25, 2021

PAST

35. University of Waterloo, Geometry and Topology Seminar, November 20, 2020
 34. University of California, Santa Barbara, Differential Geometry Seminar, October 9, 2020

33. ~~Stanford University, Geometry Seminar, March 11, 2020~~
(Cancelled due to the Covid-19 pandemic.)
32. James Madison University, Undergraduate Colloquium, February 24, 2020
31. Michigan State University, Geometry and Topology Seminar, February 13, 2020
30. Rényi Institute of Mathematics, Hungarian Academy of Sciences, Algebraic Geometry and Differential Topology Seminar, December 20, 2019
29. *SIAM Conference on Analysis of Partial Differential Equations, Minisymposium on Gauge Theory and Partial Differential Equations* (conference), La Quinta, California, December 11–14, 2019
28. Universidade Federal Fluminense, Mathematical Physics Day, November 27, 2019
27. *Novel Vistas on Vortices* (conference), Simons Center for Geometry and Physics, November 11–15, 2019
26. North Carolina State University, Geometry and Topology Seminar, October 22, 2019
25. Duke University, Geometry and Topology Seminar, September 9, 2019
24. *Geometric and analytic aspects of moduli spaces* (conference), Leibniz University, Hannover, July 22–26, 2019
23. *The 11th IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena, "Mathematical perspectives in quantum mechanics and quantum chemistry" Session* (conference), Athens, Georgia, April 17–19, 2019
22. *Mini-conference on Monopoles* (conference), Tuscon, Arizona, February 17–21, 2019
21. University of Maryland, Geometry and Topology Seminar, February 11, 2019
20. *Geometry and Physics of Gauge Theories at Infinity* (conference), Saskatoon, Saskatchewan, August 3–6, 2018
19. *SIAM Annual Meeting 2018, Quantum Dynamics Minisymposium* (conference), Portland, Oregon, July 9–13, 2018
18. Duke University, Geometry and Topology Seminar, February 26, 2018
17. Rényi Institute of Mathematics, Hungarian Academy of Sciences, Algebraic Geometry and Differential Topology Seminar, December 15, 2017
16. *CMS Winter Meeting* (conference), University of Waterloo, December 8–11, 2017
15. Perimeter Institute, Mathematical Physics Seminar, December 4, 2017
14. University of Waterloo, Geometry and Topology Seminar, December 1, 2017

13. Michigan State University, Mathematical Physics and Gauge Theory Seminar, October 3, 2017
12. Postdoctoral Seminar of the *Geometric Analysis Thematic Program*, Fields Institute, August 17, 2017
11. *Mathematical Congress of the Americas* (conference), Montréal, July 24–28, 2017
10. *The Sen Conjecture and Beyond* (conference), UCL, June 19–23, 2017
9. *Mathematics of topological phases of matter* (thematic program), Simons Center for Geometry and Physics, May 23, 2017
8. Caltech, Noncommutative Geometry Seminar, March 8, 2017
7. CIRGET UQAM, Geometry and Topology Seminar, February 24, 2017
6. University of Waterloo, Geometry and Topology Seminar, September 23, 2016
5. McMaster University, Geometry and Topology Seminar, September 16, 2016
4. *AMS Fall Eastern Sectional Meeting* (conference), Rutgers University, November 14–15, 2015
3. Budapest University of Technology, Geometry Seminar, December 16, 2014
2. *Algebra, Geometry, and Mathematics Physics VI* (conference), Tjärnö, Sweden, October 25–30, 2010
1. Institute for Particle and Nuclear Physics (RMKI), Hungarian Academy of Sciences, Theoretical Physics Seminar, March 12, 2010

Organization

FUTURE

4. Geometry and Physics of ALX Metrics in Gauge Theory (workshop), at the American Institute of Mathematics, August 29–September 2 2022
Coorganizing with Laura Fredrickson, Steve Rayan, and Hartmut Weiß.
3. Geometry, Analysis, and Quantum Physics of Monopoles (online workshop), at the Banff International Research Station, January 31–February 5, 2021
Coorganizing with Benoit Charbonneau, Sergey Cherkis, and Jacques Hurtubise.

PAST

2. AMS Fall Eastern Sectional Meeting (online), Special Session on Recent developments in Gauge Theory", October 3–4, 2020
Coorganized with Siqu He.
1. AMS Fall Southeastern Sectional Meeting, University of Florida, Special Session on Geometry of Gauge Theoretic Moduli Spaces", November 2–3, 2019
Coorganized with Chris Kottke.

Students

4. Christopher Lang, University of Waterloo, Summer 2019
Supported by NSERC-USRA and cosupervised with Benoit Charbonneau
3. Anuk Dayaprema, Duke University, Summer 2019
DoMath project; supported by the Department of Mathematics of Duke University
2. Haoyang Yu, Duke University, Summer 2019
DoMath project; supported by the Department of Mathematics of Duke University
1. Christopher Lang, University of Waterloo, Winter 2017
Supported by departmental USRA and cosupervised with Benoit Charbonneau

Teaching experience

Unless otherwise specified, I was the sole instructor for a single, small-class section.

FUTURE

25. Math 4b, University of California, Santa Barbara, Spring 2021

CURRENT

24. Math 8, University of California, Santa Barbara, Winter 2021

PAST

23. Math 4b (about a 140 students), University of California, Santa Barbara, Fall 2020
22. Math Math 8, University of California, Santa Barbara, Fall 2020

21. Linear Algebra and Differential Equations, Duke University, Summer 2020
20. Linear Algebra (2 sections, undergraduate level), Duke University, Spring 2020
19. Advanced topics in Functional Analysis (5-week, graduate level minicourse), Duke University, Spring 2020
18. Functional Analysis (graduate level), Duke University, Fall 2019
17. Differential Geometry (undergraduate level), Duke University, Spring 2019
16. Multivariable Calculus, Duke University, Fall 2018
15. Linear Algebra (2 sections, undergraduate level), Duke University, Spring 2018
14. Advanced Calculus (about 150 students), University of Waterloo, Spring 2017
13. Introductory Calculus (about a 150 students), University of Waterloo, Fall 2016
12. Lead TA at the Math Learning Center, Michigan State University, Fall 2014–Spring 2016
11. Calculus II (3 sections; role: recitation TA), Michigan State University, Spring 2016
10. Survey of Calculus I (3 sections; role: recitation TA), Michigan State University, Fall 2015
9. Supervising TA of Summer Semester, Michigan State University, Summer 2015
8. Differential Geometry (graduate level, role: Recitation TA), Michigan State University, Fall 2014
7. Calculus I, Michigan State University, Spring 2014
6. Calculus I, Michigan State University, Fall 2013
5. Calculus I, Michigan State University, Summer 2013
4. Survey of Calculus I, Michigan State University, Spring 2012
3. Survey of Calculus I, Michigan State University, Fall 2012
2. Survey of Calculus I, Michigan State University, Spring 2012
1. College Algebra (2 sections), Michigan State University, Fall 2011

Service

- Refereed for:
 1. Communications in Mathematical Physics
 2. SIGMA (Symmetry, Integrability and Geometry: Methods and Applications)
- Reviewer for Mathematical Reviews

- Coorganizer of the Geometry and Topology Seminar, Duke University, 2018–2020
- Coorganizer of the Differential Geometry Seminar, University of California, Santa Barbara, since 2020

Awards, Scholarships, and Grants

AMS–Simons Travel Grant, 2018–2020

Dissertation Completion Fellowship Award, MSU, 2016

Douglas A. Spragg Endowed Fellowship in Mathematics Award, MSU, 2015

Dissertation Continuing Fellowship Award, MSU, 2015

Herbert T. Graham Scholarship Award, MSU, 2014

Dr. Paul and Wilma Dressel Endowed Scholarship Award, MSU, 2013

Scholarship of the Hungarian Republic, 2008

Professional Memberships

American Mathematical Society (AMS)

International Association of Mathematical Physics (IAMP)

Other skills

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| LANGUAGES | Hungarian, English |
| \LaTeX | I mean, pretty good |
| CODING IN GO/C/C++ | Beginner |
| KRAV MAGA | Level 3 (CT 707) |
| HARMONICA | Beginner |

References

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|---------------------------|---------------------------|---------------------------------|
| Benoit Charbonneau | University of Waterloo | BENOIT.CHARBONNEAU@UWATERLOO.CA |
| Thomas H. Parker | Michigan State University | PARKER@MATH.MSU.EDU |
| Mark A. Stern | Duke University | STERN@MATH.DUKE.EDU |