

Curriculum Vitae

Alex Küronya

PERSONAL INFORMATION

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EMPLOYMENT

2010 – 2013 Albert-Ludwigs-Universität Freiburg, Akademischer Mitarbeiter (DFG Forschergruppe)

2008 – Budapest University of Technology and Economics, Associate professor with tenure

2004 – 2008 Universität Duisburg–Essen, Wissenschaftlicher Mitarbeiter

2006 – 2007 Alfréd Rényi Institute of Mathematics, Marie Curie Intraeuropean Research Fellow

2004 – 2008 Budapest University of Technology and Economics, Assistant professor

1998 – 1999 Computer and Automation Institute of the Hungarian Academy of Sciences, Researcher

DEGREES

2012 Habilitation, Albert-Ludwigs-Universität Freiburg

2004 Ph. D. in Mathematics, University of Michigan (Ann Arbor).

1998 M. Sc. in Mathematics, Eötvös University (Budapest).

1995 M.Sc. in Computer Engineering, Budapest University of Technology and Economics.

FELLOWSHIPS, GRANTS

2010 – 2014 OTKA Grant No. 81203 (principal investigator: András Stipsicz)

2009 Invited Researcher at the CNRS, Université Joseph Fourier, Grenoble (3 months)

2009 – 2011 OTKA Grant No. 77604 (principal investigator)

2009 – 2013 OTKA Grant No. 77476 (principal investigator: Lajos Rónyai)

2008 – 2011 Bolyai Fellowship of the Hungarian Academy of Sciences

2006 – 2010 OTKA Grant No. 61116 (principal investigator: Tamás Szamuely)

2006 – 2007 Öveges Scholarship

2003 – 2004 Rackham Predoctoral Fellowship, University of Michigan

1999 Fellowship of the Soros Foundation

- 1998 DAAD Scholarship, RWTH Aachen (1 month)
- 1997 CEEPUS Scholarship, TU Graz (1 month)
- 1993 TEMPUS Scholarship, Università di Pisa (3 months)

ORGANIZATION AND COMMUNITY SERVICE

- 2014 'Positivity of linear series and vector bundles' Workshop at the Banff International Research Station (coorganized with Sándor Kovács and Tomasz Szemberg)
- 2012 – OTKA referee
- 2011 Summer school 'Birational Automorphisms of Varieties of General Type' (co-organized with Daniel Greb and Stefan Kebekus)
- 2011 Study seminar at the Albert-Ludwigs-Universität Freiburg on the work of Lazić about finite generation
- 2004 – 2008 Mathematical Reviews
- 2007 Study seminar at the Universität Duisburg-Essen on the work of Hacon and McKernan (co-organized with Eckart Viehweg)
- 2004 – Referee for the following journals: Transactions of the AMS, Duke Mathematical Journal, Journal of Algebraic Geometry, Journal of the EMS, IMPANGA Lecture Notes Series, Advances in Mathematics, Communications in Algebra, Communications in Algebra, Mathematische Annalen, Annales de l'Institut Fourier, Journal of Algebra, Acta Mathematica Sinica, Journal of Algorithms, Central European Journal of Mathematics

THESIS STUDENTS

- in progress Norbert Pintye (Ph. D., Budapest University of Technology and Economics)
- 2012 Maximilian Gerhards (M. Sc., co-advised with Stefan Kebekus, Universität Freiburg)
- 2011 Norbert Pintye (M.Sc., Budapest University of Technology and Economics)
- 2009 Pál Zsámboki (M.Sc., Budapest University of Technology and Economics)

SELECTED INVITED TALKS

- 2012 'Summer Workshop in Algebraic and Arithmetic Geometry' LMU München
- 'Linear Series on Surfaces' Workshop, Johannes-Gutenberg-Universität, Mainz
- 2011 Sektionsvortrag, DMV Jahrestagung
- Algebraic Geometry Seminar, University of Illinois at Chicago
- Algebraic Geometry Seminar, University of Utah

SFB 45 Kolloquium, Johannes-Gutenberg-Universität Mainz

- 2010 'Linear systems on algebraic varieties' Miniworkshop, Oberwolfach
- 2009 Algebra Seminar, University of Washington, Seattle
Algebraic Geometry Seminar, Université Joseph Fourier, Grenoble
Workshop on Multiplier Ideals in Algebraic and Analytic Geometry, Oberwolfach
- 2008 Workshop on Higher-dimensional Complex Algebraic Geometry, Saint Pierre de Chartreuse
Algebraic Geometry Seminar, Humboldt Universität zu Berlin
- 2006 'Recent Trends in Higher-dimensional Geometry', Banff
- 2005 Workshop on Multiplier Ideals, Universität zu Köln
Seminar Zahlentheorie, ETH Zürich
Algebraic Geometry seminar, Université Paris VI and VII (Jussieu)
- 2004 Algebraic geometry seminar, Alfréd Rényi Institute, Budapest (2 talks)
- 2002 American Mathematical Society Sectional Meeting, Ann Arbor
- 1997 Algorithms for Future Technologies VII. Workshop, Saarbrücken (Germany)

RESEARCH PAPERS

1. Dave Anderson, Alex Küronya, Victor Lozovanu: Okounkov bodies of finitely generated divisors, *preprint*, [arXiv:1206.2499](https://arxiv.org/abs/1206.2499), to appear in the *International Mathematics Research Notices*.
2. Alex Küronya, Catriona Maclean, Tomasz Szemberg: Functions on Okounkov bodies coming from geometric valuations, *preprint*, [arXiv:1210.3523v1](https://arxiv.org/abs/1210.3523v1)
3. Alex Küronya, Victor Lozovanu, Catriona Maclean: Volume functions of linear series, *Mathematische Annalen*, DOI: 10.1007/s00208-012-0859-0.
4. Anne-Sophie Kaloghiros, Alex Küronya, Vladimir Lazić: Finite generation and geography of models, *preprint*, [arXiv:1202.1164v2](https://arxiv.org/abs/1202.1164v2), to appear in "Minimal models and extremal rays", *Advanced Studies in Pure Mathematics*, Mathematical Society of Japan, Tokyo
5. Alex Küronya: Positivity of restrictions on subvarieties and vanishing of higher cohomology, *Annales de l'Institut Fourier* **63** (2013).
6. Th. Bauer, B. Harbourne, A. Küronya, A. L. Knutsen, S. Müller-Stach, X. Roulleau, T. Szemberg: Negative curves on algebraic surfaces, *preprint*, [arXiv:1109.1881v2](https://arxiv.org/abs/1109.1881v2), to appear in the *Duke Math. J.*
7. Alex Küronya, Catriona Maclean: Zariski decompositions of b-divisors, *Math. Zeitschrift*, DOI: 10.1007/s00209-012-1012-1.
8. Th. Bauer, C. Bocci, S. Cooper, S. Di Rocco, B. Harbourne, K. Jabbusch, A. Küronya, A. L. Knutsen, R. Miranda, H. Schenk, T. Szemberg, Z. Teitler: Recent developments and open problems in the theory of linear series, In "Contributions to Algebraic Geometry", 93–140, IMPANGA Lecture Notes (Piotr Pragacz, ed.), EMS Series of Congress Reports, edited by the European Mathematical

Society Publishing House 2012.

9. Alex Küronya, Victor Lozovanu, Catriona Maclean: Convex bodies appearing as Okounkov bodies of divisors, *Advances in Mathematics* **229** (2012), 2622–2639.
10. Tommaso de Fernex, Alex Küronya, Robert Lazarsfeld: Higher cohomology of divisors on a projective variety, *Mathematische Annalen* **337** No. 2. (2007), 443–455.
11. Alex Küronya, Alexandre Wolfe: A Briançon–Skoda type theorem for graded systems of ideals, *Journal of Algebra* **307** No. 2. (2007), 795–803.
12. Alex Küronya: Asymptotic cohomological functions on projective varieties, *American Journal of Mathematics* **128** No. 6. (2006) 1475–1519.
13. Milena Hering, Alex Küronya, Samuel Payne: Asymptotic cohomological functions of toric divisors, *Advances in Mathematics* **207** No. 2. (2006) 634–645.
14. Thomas Bauer, Alex Küronya, Tomasz Szemberg: Zariski decompositions, volumes, and stable base loci, *Journal für die reine und angewandte Mathematik* **576** (2004), 209–233.
15. Alex Küronya: A divisorial valuation with irrational volume, *Journal of Algebra* **262** (2003), 413–423.
16. Willem de Graaf, Gábor Ivanyos, Alex Küronya, Lajos Rónyai: Computing Levi decompositions in Lie algebras, *Applicable Algebra in Engineering, Communication and Computing* **8** (1997), 291–304.

OTHER PUBLICATIONS

1. Alex Küronya: Partial positivity concepts in projective geometry, Habilitationsschrift, Albert-Ludwigs-Universität Freiburg, 2011.
2. Alex Küronya: Introduction to algebraic combinatorics (in Hungarian), electronic lecture notes, 2011, 167 pp.
3. Alex Küronya: Introduction to topology, electronic lecture notes for the Budapest Semesters in Mathematics, 2009, 102pp.
4. Alex Küronya: An informal introduction to the minimal model program, 2007, preprint
5. Alex Küronya, Victor Lozovanu, Catriona Maclean: Volumes of Newton–Okounkov bodies, Oberwolfach Report No. 41/2011
6. Alex Küronya, Victor Lozocanu, Catriona Maclean: Arithmetic properties of volumes of divisors, Oberwolfach Report No. 45/2010
7. Alex Küronya, Catriona Maclean: Okounkov bodies in low dimensions, Oberwolfach Report No. 21/2009, 1139–1142
8. Alex Küronya: Asymptotic cohomological functions on projective varieties, PhD Thesis in Mathematics, University of Michigan, 2004.
9. Alex Küronya: Algorithmic questions in Lie algebras, MSc. Thesis in Pure Mathematics, Eötvös University, 1998.

10. Alex Küronya: Computing Levi decompositions of Lie algebras, MSc. Thesis in Technical Informatics, Budapest University of Technology and Economics, 1995.