Curriculum Vitae

B. Miller
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Research Interests

Descriptive set theory and its connections with combinatorics and ergodic theory

Education

8/1998–5/2004	University of California, Berkeley: PhD in Mathematics
8/1994–6/1998	California Institute of Technology: BS/MS in Mathematics

Employment

3/2022–Present	Career break (to take care of mother)
9/2017–2/2022	Tenured Full Professor, University of Vienna, Austria
3/2016–8/2017	Tenured Associate Professor, University of Vienna, Austria
4/2015–2/2016	Tenure-track Assistant Professor, University of Vienna, Austria
8/2010–3/2015	Tenured Associate Professor, University of Münster, Germany
7/2007–7/2010	Career break (to take care of father)
7/2004–6/2007	Assistant Professor, University of California, Los Angeles

Third-Party Funding

2017 – 2019	Austrian Science Foundation Grant P29999 (€320,000)
2015 – 2018	Austrian Science Foundation Grant P28153 (€314,000)
2014 – 2018	German Science Foundation SFB Grant 878 Project A6 continuation (€235,000)
2010 – 2014	German Science Foundation SFB Grant 878 Project A6 (€294,000)

Selected publications

Minimal definable graphs of definable chromatic number at least three (with R. Carroy, D. Schrittesser, and Z. Vidnyánszky)
Forum of Mathematics, Sigma, E7 1–16, **9** (2021)

Dichotomy theorems for families of non-cofinal essential complexity (with J. Clemens and D. Lecomte)
Advances in Mathematics, 285–299, **304** (2017)

Measure reducibility of countable Borel equivalence relations (with C. Conley)
Annals of Mathematics, 347–402, **185 (2)** (2017)

The smooth ideal (with C. Conley and J. Clemens)
Proceedings of the London Mathematical Society, 57–80, **112 (1)** (2016)

The Borel cardinality of Lascar strong types (with I. Kaplan and P. Simon)
Journal of the London Mathematical Society, 609–630, **90 (2)** (2014)
Essential countability of treeable equivalence relations (with J. Clemens and D. Lecomte)
Advances in Mathematics, 1–31, **265** (2014)
Descriptive Kakutani equivalence (with C. Rosendal)
Journal of the European Mathematical Society, 179–219, **12 (1)** (2010)

Selected invited lectures

Recurrence and the existence of invariant measures
Sixth European Set Theory Conference, Budapest (2017)
Another proof of the Jayne-Rogers theorem
The Role of the Higher Infinite in Mathematics and Other Disciplines, Cambridge (2015)
Definable cardinals just beyond $\mathbb{R}/\mathbb{Q}$
European Logic Colloquium (plenary lecture), Vienna (2014)
The smooth ideal
Winter ASL Meeting (session in honor of Leo Harrington), Berkeley (2011)
Graph-theoretic dichotomy theorems in descriptive set theory
Eleventh CIRM Workshop in Set Theory (three lecture minicourse), Luminy (2010)
Forceless, ineffective, powerless proofs of descriptive set-theoretic dichotomy theorems
European Logic Colloquium (plenary lecture), Sofia (2009)

Conference Organization

7/2019	Seventh European Set Theory Conference, University of Vienna, Austria
9/2018	Set Theory Today: A Conference in Honor of Georg Cantor, University of Vienna, Austria
6/2018	Descriptive Set Theory, CBI, EPFL, Switzerland
12/2016	Current Trends in Descriptive Set Theory, ESI, University of Vienna, Austria
10/2012	MALOA Set Theory Research Workshop, University of Münster, Germany

Teaching

University of Vienna	Lecturer for graduate seminars in descriptive set theory and measure theory; supervisor for graduate students
University of Münster	Lecturer for undergraduate and graduate courses and seminars in descriptive set theory, forcing, logic, model theory, recursion theory, and set theory; supervisor for graduate students
University of California, Los Angeles	Lecturer for undergraduate and graduate courses in calculus, complex analysis, linear algebra, logic, multivariable calculus, and set theory; informal supervisor for a graduate student
University of California, Berkeley	Teaching assistant for courses in calculus, differential equations, linear algebra, multivariable calculus, and numerical analysis
California Institute of Technology	Teaching assistant for courses in calculus, differential equations, discrete mathematics, linear algebra, and multivariable calculus