

CURRICULUM VITAE

Arzu Boysal
Boğaziçi Üniversitesi, Matematik Bölümü
34342 Bebek, İstanbul
arzu.boysal@boun.edu.tr

PERSONAL INFORMATION:

Born in 1972. Turkish citizen.

EDUCATION AND EMPLOYMENT:

4/2013– Associate Professor, Boğaziçi University, Department of Mathematics.
12/2008 – 4/2013 Assistant Professor, Boğaziçi University, Department of Mathematics.
01/2007 – 12/2007 Postdoctorate, Université Paris 6, France.
05/2006 – 12/2006 Postdoctorate, Mathematics Section, International Centre for Theoretical
Physics, Italy.
02/2006 – 05/2006 LieGrits Postdoctorate, Université Paris 7, France.
08/2005 – 12/2005 Visiting Instructor, Department of Mathematics, University of North
Carolina at Chapel Hill, USA.
08/1998 – 08/2005 Research and Teaching Assistant, Department of Mathematics, University of
North Carolina at Chapel Hill, USA.
08/2000 – 08/2005 Ph.D., Department of Mathematics, University of North Carolina at Chapel
Hill, USA.
Advisor: Prof. Shrawan Kumar.
Title: Picard group of moduli spaces of G-bundles over algebraic curves.

(Earlier education and employment)

08/1998 – 08/2000 M.S., Department of Operations Research, UNC Chapel Hill, USA.
07/1996 – 07/1998 Engineer, Eczacıbaşı-Baxter Healthcare Co., İstanbul.
09/1995 – 06/1996 Engineer, Holset Engineering Co., UK.
09/1994 – 08/1995 M.Sc., Department of Mechanical Engineering, University of Bradford, UK.
09/1990 – 06/1994 B.Sc., Department of Industrial Engineering, Boğaziçi Üniversitesi.
09/1987 – 06/1990 İstanbul Atatürk Fen Lisesi.

SCHOLARSHIPS AND AWARDS:

British Council, Postgraduate scholarship, 9/1994-8/1995.
British Council, Professional Involvement Project, 9/1995-6/1996.

SHORT TERM VISITING POSITIONS:

14/04/2008-25/04/2008 École Polytechnique, Palaiseau, France.
10/06/2008-20/06/2008 Instituto de Matemáticas y Física Fundamental, Madrid, Spain.
24/06/2009-08/07/2009 École Polytechnique, Palaiseau, France.
09/07/2009-19/07/2009 Université Montpellier II, Montpellier, France.
06/09/2009-20/09/2009 University of North Carolina at Chapel Hill, USA.

RESEARCH INTERESTS:

My research focuses on applying methods of representation theory of Lie groups and Lie algebras to questions coming from various areas of mathematics (in particular geometry).

LIST OF PUBLICATIONS:

1. Boysal A. and Kumar S., '*Explicit determination of the Picard group of moduli spaces of semistable G -bundles*', Math. Annalen, 332, 4, 823–842 (2005).
2. Boysal A., '*Non-abelian theta functions of positive genus*', Proc. Amer. Math. Soc., 136, 4201–4209 (2008).
3. Boysal A. and Kumar S., '*Conjectural presentations of Fusion Algebras*', Advanced Studies in Pure Mathematics, Math. Soc. Japan, Tokyo, 54, 95–107 (2009).
4. Boysal A. and Vergne M., '*Paradan's wall crossing formula for partition functions and Khovanskii-Pukhlikov differential operator*', Annales de l'Institut Fourier, 59, no. 5, 1715–1752 (2009).
5. Boysal A. and Pauly C., '*Strange duality for Verlinde spaces of exceptional groups at level one*', IMRN, no. 4, 595–618 (2010).
6. Boysal A. and Vergne M., '*Multiple Bernoulli series, an Euler-MacLaurin formula, and wall crossings*', Annales de l'Institut Fourier, 62, no. 2, 821–858 (2012).
7. Baldoni V., Boysal A., and Vergne M., '*Multiple Bernoulli series and volumes of moduli spaces of flat bundles over surfaces*', Journal of Symbolic Computation, 68, 27–60 (2015).
8. Boysal A., Ecevit F., and Yildirim C.Y., '*A lattice sum involving the cosine function*', J. Math. Anal. Appl., no. 1, 134–160 (2018).
9. Boysal A., Ecevit F., and Yildirim C.Y., '*Asymptotic evaluation of a lattice sum associated with the Laplacian matrix*', Analysis Mathematica, 48 (3), 649–682, (2022).
10. Boysal A., '*PRV for the fusion product, the case $\lambda \gg \mu$* ', Mathematisches Zeitschrift, 299, no: 3-4, 1897–1906 (2021).

LIST OF INVITED TALKS AT SEMINARS AND CONFERENCES:

1. Special Session in Algebra (contributed paper) (1/2005), AMS National Meeting in Atlanta, USA.
2. Special Session on Representations of Groups and Algebras (10/2005), AMS Fall West Section Meeting in Eugene, USA.
3. Séminaire d'algèbre (3/2006), Institut Henri Poincaré, France.
4. Séminaire sur les algèbres enveloppantes (4/2006, 3/2007, 7/2009), Institut de Mathématiques de Jussieu, France.

5. Séminaire ‘algèbre géométrie algébrique Topologie algébrique’(10/2007), Université Montpellier II, France.
6. Geometric representation theory seminar (9/2009), University of North Carolina at Chapel Hill, USA.
7. Mathematics Colloquium (3/2010), Koç University, Turkey.
8. Conference on number theory, arithmetic and algebraic geometry (4/2010), Middle East Technical University–NCC.
9. Algebra–Geometry Day (3/2010), Feza Gürsey Institute, Turkey.
10. IMBM Algebra Workshop II (7/2010), Istanbul Center for Mathematical Sciences, Turkey.
11. TMD 22th National Mathematics Symposium (8/2010), Kayseri University, Turkey.
12. IMBM Math days (6/2012), Istanbul Center for Mathematical Sciences, Turkey.
13. Conference on effective methods in algebraic geometry (6/2013), Goethe Universität, Germany.
14. Japanese Turkish joint geometry meeting (10/2013), Galatasaray University, Turkey.
15. Mathematics Colloquium (12/2013) Mimar Sinan Fine Arts University, Turkey.
16. Mathematics Colloquium (4/2014), Middle East Technical University, Turkey.
17. Antalya Algebra Days XVI (5/2014), Turkey.
18. Mathematics Colloquium (4/2015), Galatasaray University, Turkey.
19. Istanbul Algebraic and Arithmetic Geometry Seminar (5/2015), Istanbul Center for Mathematical Sciences, Turkey.
20. Workshop on Geometric Quantization and Applications (10/2018), CIRM (Centre International de Rencontres Mathématiques), France.
21. Workshop on Bundles and conformal blocks with a twist (6/2022), International Centre for Mathematical Sciences, Edinburgh, UK.

LIST OF RESEARCH PROGRAMS, WORKSHOPS AND SEMINARS PARTICIPATED (INVITED OR POST-EVALUATION):

1. Geometry and Combinatorics Graduate Summer School (7/2004), Institute of Advanced Study (IAS), Park City, USA.
2. Seminar on Algebraic Stacks (10/2006), Mathematisches Forschungsinstitut Oberwolfach, Germany.
3. Seminar on Representation Theory and Applications (11/2006), Mathematisches Forschungsinstitut Oberwolfach, Germany.

4. Program in representation theory, complex analysis and integral geometry (6–07/2007), Max Planck Institute for Mathematics/Hausdorff Institute, Germany.
5. Workshop on enveloping algebras and geometric methods in representation theory (3/2009), Mathematisches Forschungsinstitut Oberwolfach, Germany.
6. Workshop on moduli spaces (2/2011), Isaac Newton Institute for Mathematical Sciences, UK.
7. Research in Pairs (2/2012), Mathematisches Forschungsinstitut Oberwolfach, Germany.
8. Workshop on Gauge Theory and Complex Geometry (6/2018), CIRM (Centre International de Rencontres Mathématiques), France.
9. Workshop on Geometric Quantization and Applications (10/2018), CIRM (Centre International de Rencontres Mathématiques), France.
10. Workshop on Bundles and conformal blocks with a twist (6/2022), International Centre for Mathematical Sciences, Edinburgh, UK.

TEACHING EXPERIENCE:

At Boğaziçi University (excluding summer programs):

Undergraduate level: Single variable calculus; Multivariable calculus ($\times 10$); Matrix Theory ($\times 11$); Differential Equations ($\times 3$); Linear Algebra ($\times 4$); Multivariable calculus for Mathematics Students ($\times 4$); Introduction to Complex Analysis ($\times 4$); Complex Analysis ($\times 2$); Group Theory; Analysis on Manifolds.

Graduate level: Graduate Algebra I, Graduate Algebra II ($\times 2$), Complex Analysis I.

Elective courses (graduate level): Introduction to K -theory; Lie Groups ($\times 4$); Algebraic Geometry ($\times 3$).

At the University of North Carolina at Chapel Hill, USA (during my Ph.D. studies as a Teaching Assistant, including summer programs):

Undergraduate level: Basic Algebra ($\times 4$); Trigonometry and Analytic Geometry ($\times 5$); Calculus of Functions of One Variable ($\times 4$); Multivariable Calculus ($\times 2$).

THESIS SUPERVISED:

Master's thesis:

Zehra Bilgin, (co-advisor O. Coşkun), Quotients of Hom-Functors, 7/2012.

Fatma Çiçek, (co-advisor T. B. Gürel), Algebro-geometric solutions of differential equations, 12/2014.

Uğur Cin, Central firing of type A_{2n} with initial weight 0, 10/2020.

ACADEMIC SERVICE:

Academic advisor of undergraduate students of class entering in 2009 (last graduate in 2020).

Member of Scholarship Committee (2012-2016).

Curriculum committee (2013-2015).

Graduate Admissions Committee (2012-2017).

Colloquium co-organizer (2010-2012).

SPONSORED RESEARCH:

Researcher, TÜBİTAK Project (3501) 109T661, 'Lie tipi sonlu grupların temsilleri', 4/2010–4/2013.

Principal Researcher, BAP Project 5076, 'Duvar atlama metodu ile hacim ve kesit boyutu hesabı', 4/2010–7/2013.

Principal Researcher, BAP Project 13387, 'Asymptotic expansion of a lattice sum'. 12/2017–12/2020.