Andrei Jorza

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RESEARCH INTERESTS

Number theory, representation theory, algebraic geometry

Galois representations, automorphic representations, p-adic L-functions, the Langlands program

Rational points, enumerative geometry

EMPLOYMENT

University of Notre Dame — Assistant Professor	2013–present
California Institute of Technology — Olga Taussky/John Todd Instructor	2011–2013
Institute for Advanced Study — Member	Fall 2010

VISITING POSITIONS

University of Lille, Lille, France	June 2019
Sorbonne University, Institute of Mathematics at Jussieu, Paris, France	June 2018
Sorbonne University, Institute of Mathematics at Jussieu, Paris, France	June 2017
University of Lille, Lille, France	June 2016
University of Lille, Lille, France	June 2013

EDUCATION

Princeton University
Ph.D. in Mathematics, 2010.
Dissertation under the supervision of Andrew Wiles: *Crystalline representations for* GL(2) *over quadratic imaginary fields.*

Harvard University
A.B. in Mathematics, *magna cum laude with highest honors*, 2005.
Senior honors thesis with William Stein: *The Birch and Swinnerton-Dyer conjecture for abelian varieties over number fields.*

AWARDS AND GRANTS

National Security Agency Young Investigator's Grant, 2016-18 (PI)
Simons Collaboration Grant, awarded 2016
European Center for Mathematics, Physics and their Interaction Grant, 2015
European Center for Mathematics, Physics and their Interaction Grant, 2013
Wister prize for highest record in mathematics, Harvard University, 2005.
John Harvard scholarship, Harvard University, 2004-05.
Putnam top 16, 2004.
Putnam top 26, 2002.
Silver medal, International Mathematical Olympiad, 2001.
Silver medal, International Mathematical Olympiad, 2000.

Publications

Robert Harron and Andrei Jorza, *On symmetric power $\mathcal{L}$-invariants of Iwahori level Hilbert modular forms*, AJM, 139, no. 6 (2017), 1605-1647.

Benjamin Bakker and Andrei Jorza, *Lagrangian 4-planes in holomorphic symplectic varieties of K3([4])-type*, Central European Journal of Mathematics, vol. 12 (2014), No. 7, pp. 952-975.

Andrei Jorza, *Galois representations for holomorphic Siegel modular forms*, Mathematische Annalen Volume 355, Issue 1 (2013), Page 381-400.

Andrei Jorza, *p-adic Families and Galois Representations for* GSp(4) *and* GL(2), Math. Research Letters 19 (2012), no 05, 1-10.

Benjamin Bakker and Andrei Jorza, *Higher rank stable pairs on K3 surfaces*, Communications in Number Theory and Physics, Volume 6, Number 4 (2012).

Andrei Jorza, *Crystalline representations for* GL(2) *over quadratic imaginary fields*, Ph.D. thesis, Princeton, 2010.

Grigor Grigorov, Andrei Jorza, Stefan Patrikis, William A. Stein, and Corina Tarniţă, *Computational verification of the Birch and Swinnerton-Dyer conjecture for individual elliptic curves*, Math. Comp. 78 (2009), no. 268, 2397-2425.

Preprints

Daniel Barrera Salazar, Mladen Dimitrov, and Andrei Jorza, *p-adic L-functions for nearly finite slope Hilbert modular forms and the exceptional zero conjecture*, arxiv:1709.08105, submitted.

Liubomir Chiriac and Andrei Jorza, *Comparing Hecke coefficients of automorphic representations*, arxiv:1802.05684, submitted.

Works in Preparation

Andrei Jorza, *Local-global compatibility at $\ell = p$ for Iwahori level Siegel-Hilbert modular forms*, in preparation.

Andrei Jorza, *$\mathscr{L}$-invariants for* GSp(2n) *and* GL(n) *under algebraic representations*, in preparation.

Benjamin Bakker and Andrei Jorza, *The Witten zeta function of projective varieties*, in preparation.

Sam Evens and Andrei Jorza, *The Witten zeta functions of some spherical varieties*, in preparation.

Liubomir Chiriac and Andrei Jorza, *Sums of Fourier coefficients of automorphic representations*, in preparation.

Colloquia and Invited Conference Talks

Number Theory Days, University of Lille	Jun 2019
Number theory and automorphic forms, University of Indiana, Bloomington	Apr 2017
Galois representations and automorphic forms conference, Będlewo, Poland	Aug 2016
Math for Everyone, University of Notre Dame	Feb 2016
Number Theory Conference, UIUC, Urbana, IL	Aug 2015
Joint Meetings, San Antonio, TX	Jan 2015
Atkin Memorial Conference, Chicago	May 2014
Modular forms, p-adic L-functions and Selmer groups, Oriahovitza, Bulgaria	Jul 2013
Journées arithmetiques, p-adic arithmetic geometry conference, Lyon, France	Jun 2013
Purdue University Colloquium	Jan 2013
University of Notre Dame Colloquium	Dec 2012
Workshop on rational points, MSRI	Oct 2012

University of Notre Dame Colloquium	Sep 2012
Southern California Number Theory Day, Caltech	May 2012
Galois representations and automorphic forms, Będlewo, Poland	Aug 2011

Selected Seminar Talks

University of Lille, Number theory seminar	Jun 2019
University of Massachussetts, Amherst Number theory seminar	Apr 2018
University of Notre Dame, Algebraic geometry seminar	Feb 2018
University of Georgia Number theory seminar	Nov 2017
University of Hawai'i Number theory seminar	May 2017
University of Notre Dame, Algebraic geometry seminar	Sep 2016
University of Notre Dame, Algebraic geometry seminar	Apr 2016
University of Utah Representation theory seminar	Mar 2016
University of Notre Dame, Algebraic geometry seminar	Mar 2014
Purdue University Automorphic forms seminar	Mar 2014
University of Notre Dame, Algebraic geometry seminar	Dec 2013
University of Lille Number theory seminar	Jun 2013
University of North Carolina Number theory seminar	Mar 2013
University of Chicago Number theory seminar	Jan 2013
Northwestern University Number theory seminar	Jan 2013
UC Irvine Number theory seminar	Nov 2012
CUNY-Columbia-NYU Number theory seminar	Nov 2012
Stanford University Number theory seminar	Jan 2012
UCSD Algebraic geometry seminar	Nov 2011
UCLA Number theory seminar	Oct 2011
Caltech Number theory seminar	Apr 2011
Institute for Advanced Study Galois representations and automorphic forms seminar	Dec 2010

Selected Expository Talks

Recruitment Symposium, University of Notre Dame	Mar 2017
Mathematical Research at Notre Dame	Feb 2017
Mathematical Research at Notre Dame	Dec 2015
Recruitment Symposium, University of Notre Dame	Mar 2015
Mathematical Research at Notre Dame	Oct 2014
Mathematical Research at Notre Dame	Dec 2013
Northwestern Number theory for graduate students	Jan 2013
NYU Number theory for graduate students	Nov 2012
Math Colloquium, Fullerton College	Nov 2011
Recruitment Symposium, Princeton University	Mar 2007

Teaching

Problem solving (undergraduate)	University of Notre Dame, Fall 2018
Elementary number theory (undergraduate)	University of Notre Dame, Fall 2018
Calculus III (one section)	University of Notre Dame, Spring 2018
Algebraic number theory (graduate topics)	University of Notre Dame, Spring 2018

Problem solving (undergraduate)	University of Notre Dame, Fall 2017
Honors algebra IV (honors undergraduate)	University of Notre Dame, Spring 2017
Calculus III (one section)	University of Notre Dame, Spring 2017
Honors algebra III (honors undergraduate)	University of Notre Dame, Fall 2016
Problem solving (undergraduate)	University of Notre Dame, Fall 2016
Calculus III (two sections and chair)	University of Notre Dame, Spring 2016
Elementary number theory (undergraduate)	University of Notre Dame, Fall 2015
Basic algebra II (graduate)	University of Notre Dame, Spring 2015
Basic algebra I (graduate)	University of Notre Dame, Fall 2014
Calculus II (one section)	University of Notre Dame, Fall 2014
Calculus III (one section)	University of Notre Dame, Spring 2014
Algebraic number theory (graduate topics)	University of Notre Dame, Spring 2014
Calculus for life sciences (one section)	University of Notre Dame, Fall 2013
Applications of class field theory (graduate topics)	California Institute of Technology, Spring 2013
Galois theory (undergraduate)	California Institute of Technology, Spring 2013
p-adic Hodge Theory (graduate topics)	California Institute of Technology, Winter 2012
Local class field theory (graduate)	California Institute of Technology, Winter 2012
Calculus I (one section)	California Institute of Technology, Fall 2011
Galois theory (undergraduate)	California Institute of Technology, Spring 2011
Local class field theory (graduate)	California Institute of Technology, Winter 2011
Calculus III (one section)	Princeton University, Fall 2009
Calculus II (one section)	Princeton University, Fall 2007

CONFERENCES AND WORKSHOPS ORGANIZED

Thematic program on "p-adic L-functions and eigenvarieties", Notre Dame Center for Mathematics, Summer 2020.

Mini-course on p-adic L-functions at the University of Lille, June 2019.

Mini-course on modular forms at the "Thematic Program on Kähler Geometry", University of Notre Dame, 2017.

Special session on the "Langlands program and related aspects", AMS sectional meeting, October 2015.

DEPARTMENTAL MENTORING

Graduate students advised: Eric Wawerczyk (5th year) and Paul LeVan (1st year).

Senior thesis advisor: Xiao Xiao (Notre Dame 2015) and Christian Hokaj (Notre Dame 2018)

Mentor to the Notre Dame students participating at the Putnam Competition and the Virginia Tech Regional Math Competition, 2016-2020.

REU: Christopher Perez (Caltech 2011) and Stephanie Reyes (Caltech 2012)

Dissertation committee member: Nahid Walji (Caltech 2011), Paul Nelson (Caltech 2011), Yi-Chih Chiu (Caltech 2011), and Yitao Wu (Caltech 2012).

Oral candidacy exams: Jinhe Ye (Notre Dame 2016), Eric Wawerczyk (Notre Dame 2015), Jingjing Huang (Caltech 2011), Laura Peskin (Caltech 2011)

Judge for the Notre Dame undergraduate "R. Catesby Taliaferro Prize Competition", 2015.

Reader for two senior theses: Paul Coletti (Notre Dame 2016) and Sean Kent (Notre Dame 2017).

Reading courses and research seminars with graduate and undergraduate students.

DEPARTMENTAL SERVICE

Undergraduate Committee, 2015-17.

Undergraduate majors faculty advisor, 2015–present.

Graduate admissions committee, 2014-2016.

Algebra hiring search group, 2013-2018.

OTHER TEACHING AND MENTORING ACTIVITIES

Judge at the International Mathematical Olympiad, 2018.

Judge at the Siemens Competition, 2017.

Lecturer at a highschool teachers' workshop, Vanderbilt University, 2015.

Supervised research performed by Johannes Hosle from Trinity Highschool, South Bend, 2014-2015.

Lecturer at the Princeton Math Circle, 2009-2010.

Judge at the International Mathematical Olympiad, 2008.

Instructor for the American Mathematical Competitions, University of Nebraska, 2002.

OTHER SERVICE

Referee for Journal of Number Theory, American Journal of Mathematics, Compositio Mathematica, International Journal of Number Theory, Indian Journal of Pure and Applied Mathematics, Documenta Mathematica.

Referee for FRQNT Grant, Canada.

Doctoral dissertation committee: Daniel Barrera Salazar (University of Lille, France, 2013), Adel Betina (University of Lille, France, 2016), and Shiang Tang (University of Utah, 2018).

External qualifying exam committees: Christian Klevdal (University of Utah, 2017) and Kevin Childers (University of Utah, 2017).

Mathematical advisor to "Ecuador in Motion", an exhibit organized by Tatiana Botero and Carlos Jauregui from the Department of Spanish Literatures and Cultures at Notre Dame, 2014.