Jun–Yong Park

Contact Information

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Website: `www.fibration.net`

Research Interests

Arithmetic Geometry and Topology: motive/point count of moduli of fibrations, fibred algebraic surfaces and their moduli stacks, enumerating curves and abelian varieties over global fields.

Academic Positions

Max Planck Institute for Mathematics, Bonn, Germany

Postdoctoral Fellow, 2021 Fall - Present

IBS Center for Geometry and Physics, POSTECH, Pohang, South Korea

Research Fellow / Military Service, 2018 Fall - 2021 Spring

Education

University of Minnesota Twin Cities

Ph.D. in Mathematics, 2012 Fall - 2018 Spring
Advisor: Craig Westerland

M.Sc. in Mathematics, 2016 Spring

B.Sc. in Mathematics, 2008 Fall - 2011 Fall

Pennsylvania State University

Mathematics Advanced Study Semester, 2009 Fall

Independent University of Moscow

Mathematics in Moscow, 2010 Spring

Brown University

Visiting student hosted by Thomas Goodwillie, 2018 Spring

Articles in preparation

Arithmetic of the moduli of minimal elliptic surfaces
Appendix: Counting elliptic curves with prescribed structures
(with Matthew Satriano)

Submitted articles

1. *Arithmetic geometry of the moduli stack of Weierstrass fibrations over* $\mathbb{P}^1$
   Submitted, arXiv:2107.12231. (with Johannes Schmitt)
2. *Enumerating hyperelliptic curves and abelian surfaces over* $\mathbb{P}^1$ *with lower order terms*
   Submitted, arXiv:2002.00563. (with Changho Han)
3. *Arithmetic topology of the moduli stacks of stable elliptic fibrations*
   Submitted, arXiv:1812.11694.

Published articles

4. *Motive of the moduli stack of rational curves on a weighted projective stack*
   Research in the Mathematical Sciences, **8**, No. 1 : #1 (2021) (with Hunter Spink)
   Special issue of PIMS 2019 Workshop on Arithmetic Topology
5. *Arithmetic of the moduli of semistable elliptic surfaces*
   Mathematische Annalen, **375**, No. 3-4 : 1745-1760 (2019) (with Changho Han),

6. *Unique fiber sum decomposability of genus 2 Lefschetz fibrations*
   Topology and its Applications, **222** : 29-52 (2017)
7. *Lantern substitution and new symplectic 4-manifolds with* $b_2{}^+ = 3$
   Mathematical Research Letters, **21**, No. 1 : 1-17 (2014) (with Anar Akhmedov)

Awards

Postdoctoral Research Fellowship, Institute for Basic Science, 2018 - 2021

Instructor

Multivariable Calculus (University of Minnesota Summer 2014)

Teaching Assistant

Calculus I (University of Minnesota Fall 2012)
Calculus II (University of Minnesota Spring 2013)
Honors Vector Calculus (University of Minnesota Fall 2013)
Vector Analysis (University of Minnesota Spring 2014)
Linear Algebra and Differential Equations (University of Minnesota 2014 - 2015)
Multivariable Calculus (University of Minnesota 2015 - 2017)
Riemannian Geometry taught by Robert Gulliver (University of Minnesota Fall 2012)
Algebraic Topology taught by Alexander Voronov (University of Minnesota Fall 2016)

Workshop Co-organization

Pohang Mathematics Workshop, Maison Glad Jeju Island, South Korea, December 5–8, 2019

Conference, Workshop Talks

KMS Spring Meeting in Number Theory and Arithmetic, Online, July 2020
Inaugural France-Korea Conference in Algebraic Geometry, Number Theory and Partial Differential Equations, Institut de Mathématiques de Bordeaux, November 2019
Workshop in Algebraic Geometry at Gunsan, Ritz–Plaza Hotel, South Korea, October 2018
Chicago Summer School in Topology and Geometry, University of Chicago, June 2018
AMS Graduate Conference in Geometry & Topology, Brown University, April 2018
Midwest Algebraic Geometry Graduate Conference, University of Illinois Chicago, April 2017
Conference in Algebra, Geometry, and Topology, Temple University, May 2016

Seminar Talks

Number Theory Lunch Seminar, Max Planck Institute for Mathematics, September 2021
Algebraic Geometry Seminar, Korea Institute for Advanced Study, July 2021
Algebraic Geometry Seminar, IBS Center for Geometry and Physics, August 2020
Director's Seminar, IBS Center for Geometry and Physics, May 2020
Harvard / MIT Algebraic Geometry Seminar, MIT, April 2018
Algebra and Algebraic Geometry Seminars, Brown University, April 2017
CGP Seminar, IBS Center for Geometry and Physics, January 2017
Topology Seminar, University of Massachusetts Amherst, October 2015

Lecture Series

Postdoctoral Lecture Series, "Arithmetic of the moduli of fibered algebraic surfaces with heuristics for counting curves over global fields" 3 lectures (IBS - CGP October 2018)

Poster Presentations

ICERM Birational Geometry and Arithmetic, Brown University, May 2018
AGNES Algebraic Geometry Northeastern Series, Northeastern University, October 2017
5^{th} Heidelberg Laureate Forum, Heidelberg University, September 2017