Curriculum Vitae

Han-Bom Moon

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Contact

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Education

- Ph.D. in Mathematics, Seoul National University, 2011.
  Thesis advisor: Young-Hoon Kiem.
  Thesis title: *Birational geometry of moduli spaces of curves of genus zero.*
- B.S. in Mathematics Education, Seoul National University, graduation with honors (Summa cum laude), 2005.

Employment

Aug 2013 ~	Peter M. Curran Visiting Assistant Professor	Fordham University
Aug 2011 ~ Aug 2013	Postdoctoral Associate	University of Georgia

Research Interests

Algebraic Geometry and related areas.

- Geometry, topology and combinatorics of moduli spaces.
- Birational geometry of moduli spaces.
- Geometric invariant theory.
- Geometric and numerical properties of conformal blocks.

Publications and Preprints

1. (With C. Summers, J. von Albade, and R. Xie) Birational contractions of $\overline{M}_{0,n}$ and combinatorics of extremal assignments. submitted to *Collect. Math.*, arXiv:1508.03915.
2. (With K. Chung) Chow ring of the moduli space of stable sheaves supported on quartic curves. preprint, arXiv:1506.00298.

3. (With K. Chung) Moduli of sheaves, Fourier-Mukai transform, and partial desingularization. *Math. Z.*, to appear, arXiv:1410.8211.
4. (With S.-B. Yoo) Birational geometry of the moduli space of rank 2 parabolic bundles on a rational curve. *Int. Math. Res. Not.*, (2015), doi: 10.1093/imrn/rnv154.
5. (With D. Swinarski) Effective curves on $\overline{M}_{0,n}$ from group actions. *Manuscripta Math.*, 147 (2015), no. 1-2, 239–268.
6. Mori program for $\overline{M}_{0,7}$ with symmetric divisors. *Canad. J. Math.*, to appear, arXiv:1403.7225.
7. Mori program for $\overline{M}_{0,6}$ with symmetric divisors. *Math. Nachr.*, 288 (2015), no. 7, 824–836.
8. (With A. Gibney, D. Jensen and D. Swinarski) Veronese quotient models of $\overline{M}_{0,n}$ and conformal blocks. *Michigan Math. J.*, 62 (2013), no. 4, 721–751.
9. (With N. Giansiracusa and D. Jensen) GIT compactifications of $M_{0,n}$ and flips. *Adv. in Math.*, 248, (2013), 242–278.
10. A family of divisors on $\overline{M}_{g,n}$ and their log canonical models. *J. Pure Appl. Algebra*, 219 (2015), no. 10, 4642–4652.
11. Log canonical models for the moduli space of stable pointed rational curves. *Proc. Amer. Math. Soc.*, 141 (2013), no. 11, 3771–3785.
12. (With Y.-H. Kiem) Moduli spaces of weighted pointed stable rational curves via GIT. *Osaka J. of Math.*, Vol. 48, (2011) No. 4, 1115–1140.
13. (With Y.-H. Kiem) Moduli spaces of stable maps to projective space via GIT. *Internat. J. Math.*, 21 (2010), no. 5, 639–664.
14. (With D. Swinarski) GIT polarizations on moduli spaces of stable pointed curves, in preparation.
15. (With D. Swinarski) Base point free divisors on $\overline{M}_{0,n}$, in preparation.

Invited Talks

- (upcoming) Workshop on Combinatorial Moduli Spaces, Fields Institute, Dec 2016.
- (upcoming) algebraic geometry seminar talk, NYU, Spring 2016.
- Let's count points!, math club talk, Fordham University, Dec 2015.
- Birational geometry of moduli spaces of parabolic bundles, seminar talk, Stony Brook, Nov 2015.
- Classical invariant theory and birational geometry of moduli spaces, mathematics colloquium, Rutgers-Newark, Nov 2015.
- Effective curve class computation on moduli of rational curves, seminar talk, KIAS, Korea, Aug 2014.
- Alternative compactifications of the moduli space of pointed rational curves, seminar talk, IBS-CGP, Korea, Jul 2014.
- Do we really need integral?, math club talk, Fordham University, Mar 2014.

- Alternative compactifications of the moduli space of pointed rational curves, seminar talk, KIAS, Korea, Jan 2014.
- Alternative compactifications of the moduli space of pointed rational curves, seminar talk, Seoul National University, Korea, Dec 2013.
- Alternative compactifications of the moduli space of pointed rational curves, seminar talk, Yale University, Nov 2013.
- Birational geometry of $\overline{M}_{0,n}$ and conformal blocks, seminar talk, KIAS, Korea, Jul 2013.
- Moduli spaces and their birational geometry, seminar talk, Ehwa Women's university, Korea, Jul 2013.
- Euler's product formula and its geometric interpretation, colloquium talk at Department of Mathematics Education, Seoul National University, Jul 2013.
- Birational geometry of $\overline{M}_{0,n}$ and conformal blocks, seminar talk, KAIST, Korea, Jul 2013.
- Mori's program for $\overline{M}_{0,n}$, seminar talk, KAIST, Korea, Jul 2013.
- GIT compactifications of $M_{0,n}$, The Asian Mathematical Conference 2013, Busan, Korea, Jul 2013.
- Compactifications of moduli of curves, series lecture at KIAS, Korea, Jun 2013.
- Birational geometry of $\overline{M}_{0,n}$ and conformal blocks, seminar talk, Princeton, Mar 2013.
- Moduli spaces and their birational geometry, seminar talk, Fordham, Feb 2013.
- Moduli spaces and their birational geometry, seminar talk, University of Georgia, Feb 2013.
- Toward a classification of projective modular compactifications of $M_{0,n}$, seminar talk, UGA, Oct 2012.
- Introduction to Geometric Invariant Theory, four hours lecture on Summer School on Algebraic Geometry, Sol Beach, Korea, Jun 2012.
- New family of nef divisors on $\overline{M}_{0,n}$, seminar talk, KIAS, Korea, Jun 2012.
- GIT compactifications of $M_{0,n}$, seminar talk, KIAS, Korea, Jun 2012.
- GIT compactifications of $M_{0,n}$, seminar talk, Seoul National University, Korea, Jun 2012.
- Mori's program for moduli spaces of pointed curves and psi-classes, seminar talk, UGA, Sep 2011.
- Moduli spaces and their birational geometry, Algebra camp, Seoul National University, Korea, Aug 2011.
- Mori's program for moduli spaces of pointed curves and psi-classes, Workshop on Moduli and Birational Geometry, Gyeongju, Korea, Jul 2011.
- Mori's program for $\overline{M}_{0,n}$, seminar talk, Brown University, May 2011.
- Moduli spaces and its birational geometry, seminar talk, Chungnam University, Korea, Apr 2011.
- Mori's program for the moduli space of pointed stable rational curves, Global KMS International Conference, Postech, Korea, Oct 2010.

- Introduction to moduli spaces, Workshop for Young Mathematicians in Korea, KAIST, Korea, Jul 2010.
- Elementary construction of the moduli spaces of rational curves via GIT, Mini workshop on curves, Seoul National University, Korea, Mar 2010.
- On GIT constructions of Kontsevich moduli spaces of stable maps, Joint Meeting of the KMS and AMS, Ewha Women's University, Korea, Dec 2009.
- Cohomology of moduli spaces of stable maps to projective space, Algebra camp, Seoul National University, Korea, Jan 2008.

Teaching Experience

- At Fordham University
  - Discrete Mathematics (Fall 2015)
  - Mathematical Modeling (Spring 2015)
  - Finite Mathematics (Spring 2015)
  - Two sections of Math for Business: Precalculus (Fall 2014)
  - Abstract Algebra (Spring 2014, Fall 2014)
  - Two sections of Math for Business: Calculus (Spring 2014)
  - Multivariable Calculus I (Fall 2013)
  - Three sections of Math for Business: Finite (Fall 2013, Fall 2015)
- At University of Georgia
  - Four sections of Calculus for Engineering and Science II (Fall 2012, Spring 2013)
  - Two sections of Calculus for Engineering and Science I (Spring 2012)
- At Seoul National University
  - Teaching Assistant (2005 - 2011): Calculus I, Calculus II, Honor Calculus I, Honor Calculus II.
  - Grading Assistant (2005 - 2010): Graduate Algebra, Undergraduate Algebra, Algebraic Geometry, Linear Algebra, Differential Geometry, Engineering Mathematics, Geometric Algebra
- Guiding summer research of three undergraduate students Charles Summers, James von Albade, Ranze Xie in Summer 2015. The result was summarized as a research paper "Birational contractions of $\overline{\mathrm{M}}_{0,n}$ and combinatorics of extremal assignments", arXiv:1508.03915.
- Organizing graduate students algebraic geometry seminar in UGA (Fall 2011, Fall 2012, Spring 2013).
- Award for Outstanding Teaching Assistant, the Faculty of Liberal Education, Seoul National University, Feb 2006.
- Guiding a math club SEHM in Department of Mathematics Education, Seoul National University during 2005–2011.

- Obtaining a secondary school mathematics teacher's license in South Korea, Feb 2005.

Service and Outreach

- Paper refereed for Journal of Algebra, Bulletin of the Korean Mathematical Society, and Journal of Mathematical Society of Japan.
- Advising Korean Students Association at Fordham University since Fall 2014.
- Organizing "Mini workshop on toric varieties", a graduate student workshop in Seoul National University (Jan 14–18, 2011).

Awards and Honors

- Summer Undergraduate Research Grant, Fordham University, Jun 2015.
- Excellent Thesis Award, College of Natural Sciences, Seoul National University, Aug 2011.
- Award for Outstanding Teaching Assistant, the Faculty of Liberal Education, Seoul National University, Feb 2006.

Personal

- Born April 1982, Busan, Korea. South Korean citizen.
- Visa category: J1 (change to H1B is in progress)

References

- Young-Hoon Kiem (Thesis advisor), Seoul National University, `kiem@math.snu.ac.kr`
- Ian Morrison, Fordham University, `morrison@fordham.edu`
- Angela Gibney, University of Georgia, `agibney@math.uga.edu`
- Maksym Fedorchuk, Boston College, `maksym.fedorchuk@bc.edu`
- Cris Poor (Teaching), Fordham University, `poor@fordham.edu`